

# EDRENE

## **4th Strategic seminar Programme, list of participants and proceedings**

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**EdReNe**

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***eContentplus***

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<sup>1</sup>

OJ L 79, 24.3.2005, p. 1.

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## 1 Introduction

The 4th strategic seminar was opened by Marina Losada Yanéz, UPF and Leo Højsholt-Poulsen, UNI•C. They both underlined the importance of knowledge sharing between the members of the EdReNe network and mentioned that the agenda for the seminar was settled with that in mind. The agenda for the seminar can be found in Appendix 1 of this report.

The seminar explored EdReNe's four overall themes: which repository strategies work, how do we engage users and producers, which are the relevant standards to ensure interoperability, and how do members address the complex handling of intellectual property rights.

The presentations, the following debate and questionnaires will lead to a number of recommendations on these issues from the EdReNe network. A separate report with these recommendations will be published at [edrene.org](http://edrene.org).

This report is not strictly structured in accordance with the agenda. Instead this thematic outline is followed:

- Chapter 1 – This Introduction
- Chapter 2 – An introduction to EdReNe and the sustainable network.
- Chapter 3 – Two different presentations from Spain: first repositories from a learner centred perspective and a case study with repositories for higher education in Catalonia. Secondly, facts and figures about repositories in Spain.
- Chapter 4 – The four themes, a series of presentations set focus on the debate within the areas.
- Chapter 5 – EdReNe members give an update on top issues in their country and/or organisations. Issues include strategies to inspire teachers to share, travel well criteria, open educational content, new repositories, automatic metadata generation, survey results and much more.
- Chapter 6 – New members: EdReNe invites all stakeholders interested in sharing experiences and opinions on repositories of learning resources to join the network as members. At this seminar three new members gave a presentation of their work within the field:
  - KlasCement
  - OLnet /Open University
  - ATIT

Appendix 1: The agenda for the seminar.

Appendix 2: The list of participants.

### *Acknowledgements*

Thanks to UPF, all the presenters, and to Jens Viggo Moesmand for sharing photos taken during the seminar.

## 2 A short introduction to EdReNe

A gap exists between users who ask “where are the learning resources”, and the content providers who ask “where are the users”.

In repositories users search or browse for relevant resources among the vast supply on the market. Therefore, in many countries ministries of education, authorities or professional organisations have established repositories of educational resources.

Repositories are key disseminators of information on available learning resources, and attempt to help users locate relevant learning materials, as easy as possible. Supporting legal sharing, development and remixing of materials created by educators is becoming an increasingly important focus area for educational repositories.

The strategies for educational repositories vary – some host content, others only provide descriptions; some hold only free materials, others only commercial content; some only list digital materials, others include traditional text books. The common denominator is to ensure easy access to available learning materials



Figure 1 Leo Højsholt-Poulsen had the responsibility for EdReNe in the EU project period.



EdReNe – Educational Repositories Network – is a thematic network founded in May 2007 with co-funding by the European Union. The network brings together repository owners, content providers, and other stakeholders.

Members of the network develop, share and document strategies, experiences and solutions on the organisation, structuring and functionality of repositories. The overall goal is to improve the provision of and access to learning resources in

education. The first list of issues to address is still valid:

- How do you establish a repository of learning resources together with producers and users
- Everyday organisation and management of a repository
- Optimising number of titles and users
- Quality frameworks and criteria
- Networking repositories
- Functionalities and features of a repository
- Pedagogical metadata and links to curriculum
- Management of IPR screening and clearance
- Role of repositories in the new web environment

**The next seminar will be in Copenhagen October 6<sup>th</sup>-7<sup>th</sup> 2010.**

## 2.1 EdReNe reports

As well as proceedings and presentations from all previous events, a number of reports are available for download from the [EdReNe website](#), including:

- [State of the Art report on educational repositories](#)  
Looking for trends, evidence of success and impact (quantity and/or quality).  
Current status of European educational repositories.
- [Templates for agreements and guidelines](#)  
For repositories and content owners/providers.
- Four thematic synthesis reports
  - [Repository strategies](#)  
Planning, building and running a repository – strategic decisions
  - [Engaging users and producers](#)  
Getting educators involved – using, sharing and improving digital content
  - [Standards and interoperability](#)  
Are current standardization bodies in sync with actual user needs?
  - [Rights issues](#)  
Is copyright legislation in tune with educators' expectations?
- The consolidated recommendations report (to be announced).  
Where is EdReNe now? What have we achieved? And potential roles in the future context?

## 2.2 The future of EdReNe – the sustainable network

EdReNe started in May 2007. From May 2010 EdReNe enters the fourth phase which is the sustainable network. The network will continue!

However, in the future the network has no guaranteed funding. The network members must finance their own attendance at seminars. The value will be the knowledge shared and the unique possibility to learn from colleagues and peers.

The next event will be held in Copenhagen October 6<sup>th</sup>-7<sup>th</sup> 2010 and hosted by UNI•C. After that, the next hosts will be Kennisnet, Becta and EUN. Events will be scheduled with app. 6 months in between.

The next host organize the event. However, there will be shared responsibility in setting a valuable and interesting agenda, even though this work will be lead by the member hosting the seminar. The host will provide the facilities, lunches and coffee during the meeting.



Figure 2 EdReNe.org

UNI•C will maintain the website and the members zone. Increased use of this forum has been discussed and considered. However, e-mails seem to work better.

Finally, the former statement for associated members will be used in a modified version for new members. Basically it states that the member will “share experiences and contribute to the network”.

### 2.3 The EdReNe board

A new board was elected at this strategic seminar. The board members for the next period are: UNI•C, EUN, Becta, IML, Kennisnet, i.zone and BFU. After the seminar the board has added CNDP as an additional member.

### 2.4 Do you wish to join EdReNe?

EdReNe invites all stakeholders interested in sharing experiences and opinions on repositories of learning resources to join the network.

All members may participate in the work and events organised by the network, and they have full access to the Members Zone of the EdReNe website.

Members cover their own costs from participating in work and events organized by the EdReNe network.

### Contact

[www.edrene.org](http://www.edrene.org)

[info@edrene.org](mailto:info@edrene.org)

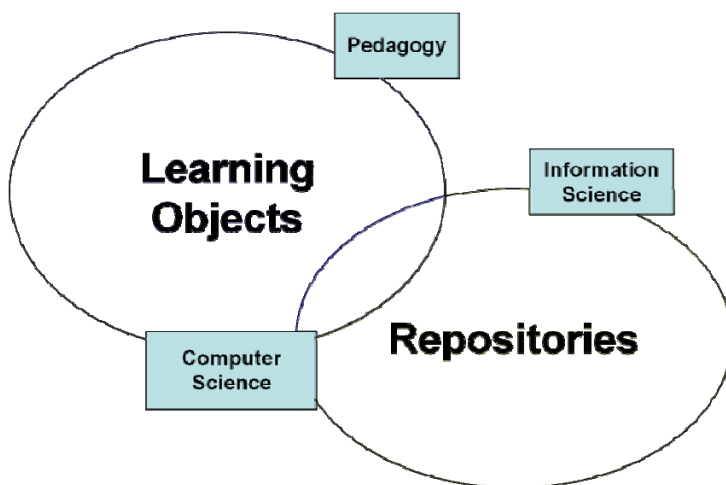
### 3 Repositories in Spain and an example from Catalonia

#### 3.1 Learning Object Repositories: a learner centred perspective

Julià Minguillón, Universitat Oberta de Catalunya, Barcelona, gave a talk on Learning Object Repositories with a learner centred perspective.

*Learning object repositories (LOR) and learning objects*

Learning object repositories (LOR) as a field combines pedagogy, information science and computer science, as illustrated in this figure:



Using computers for teaching and learning we strive to do things better. Learning objects (LOs) should help learners to acquire and develop a competence, skill, and ability. Among the desired characteristics for a LO is small to medium in size with a high level of connections to other LOs. The content is diverse (courses, exercises, simulations, data etc) and the LOs come in many different technical formats. Although Julià Minguillón focused on the digital objects, he underlined that everything can be a learning object.

*Metadata formats*

Content and metadata is one way to look at learning objects. When trying to find a metadata standard to catalogue all these resources: IEEE LOM is the suggested scheme. Problems follow. First of all, in IEEE LOM the empty set is a valid dataset, no field is required. Secondly, the number of fields is very large (70+) and in the end you use only a few of them.

Julià Minguillón proposes that we only use 1. fields that can be automatically filled in, 2. fields that are needed for preservation purposes, and 3. fields that actually are used for retrieving (i.e. author?).

It is recommended to establish two or three levels of metadata: minimum (mandatory fields), next the desirable number of fields, and then perhaps finally a complete set.

With a learning object repository there is typically two goals: ensuring the preservation (“keep the mummy – like the pyramid”) and to promote reutilization (“show the mummy”). These goals are somehow contradictory (even if the mummy is digital).

It must, however be easy to find the LOs and “the repository must be open access, for me as a teacher! Publishers might not agree”, says Julià Minguillón.

#### CASE: LOR for statistical resources

Statistics has been chosen for a case study as it is a compulsory course for thousands of students each semester (app 4000). Furthermore, there is a large collection of heterogeneous resources. Students complain: there are too many resources; they can't link concepts and tools etc.

The proposal from a teaching perspective was to build a thematic open LOR (bottom-up) and integrate the LOR in the learning process. However, they knew that a number of key factors had to be considered if the LOR should be a success, e.g. is there a genuine need of a user group, open access, critical mass, etc (references can be found in the presentation).

#### E-learning and VLE

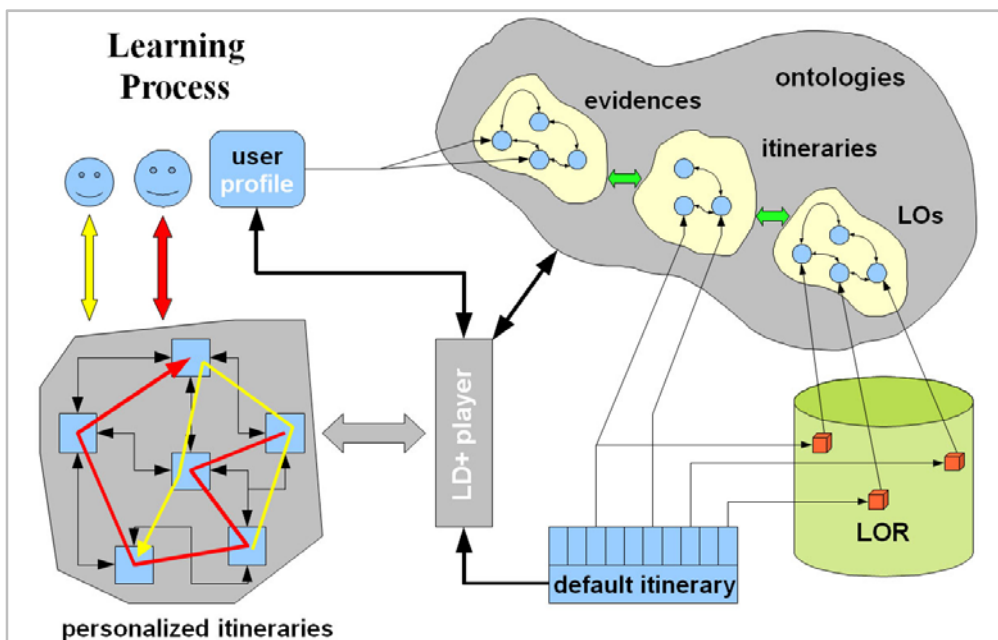


Figure 3 The learning process. A research project investigates how the user gets a personalized itinerary based on user profiles.

According to Bates (2005) there are three dimensions to consider when adopting e-learning: methodological, technological and organizational. E-learning is de facto web-based learning. The LOR is an important part of the virtual learning environment (the users access the LO repository through the VLE, they do not access the repository directly).

Using Bates dimensions, the critical issues in LOR design are:

- Methodological: Learning is more than just content. You cannot provide learners with content and expect that they learn something.
- Technological (back-end + user interface): Learning is more than just browsing and searching LOs.
- Organizational: Workflow, licenses, metadata, policies ... These are perhaps the most difficult problems to solve.

### *An ideal LOR*

The following statistics illustrates what the users expect from a LOR:

- More exercises and examples (55.7%)
- Submitting questions about a LO (50.6%)
- Ranking LOs (43.0%)
- Correcting small mistakes (41.8%)
- More simulations and interactive LOs (36.7%)
- Adding the LO as favourite (36.7%) by using:
  - delicious (11.4%), Other (51.9%), None (26.6%)
- Nothing: just browsing and searching (16.4%)**

In an ideal LOR the act of browsing and/or searching for resources should be a learning experience in itself! Julià Minguillón added that we cannot expect the students to go to the repository to find the learning objects, they must be available in their learning context and once a LO has been found, learners should be able to rate, make comments, share, subscribe, etc.

### *The reality*

However, the reality in this project was to build a repository based on the DSpace software as this is already in use at the university. The main idea was then to use DSpace as an invisible back-end, add a new user interface and some web 2.0 functionalities.

An important issue to avoid is “Google-like searches” providing a huge number of search results. 5 of 10 resources are sufficient and it must be easy to “jump” to them. Furthermore, the learners cannot be expected to enter the virtual campus - The virtual classroom must be accessible from Facebook or wherever the learner decides to be.

The new user interface consists of three complementary elements: a list of competences, relevant tag cloud, visual taxonomy (they do not expect that their learners know the taxonomy of statistics). You can click on all three of them, and the possibilities change when you click as the tree is interrelated.

The LOR is being built at the moment. Among the open issues in the project are IEEE LOM vs Dublin Core (DSpace by default is IEEE LOM), “filter and then find vs find and then filter”, combining thematic repositories, multilingualism, usability etc.

Further information:

- The presentation [www.slideshare.net/jminguillon](http://www.slideshare.net/jminguillon) or <http://files.itlearning.com/data/826/open/CO15/765.ppt>

#### **DSpace**

Open source software enables open sharing of content that spans organizations, continents and time. Source: <http://www.dspace.org/>

There are **pros and cons** with DSpace, find them in the presentation.

### **3.2 The situation of open access institutional repositories in Spain**

In the following you find facts and figures about Spanish repositories as presented by Ernest Abadal, Department of Library and Information Science, University of Barcelona. Ernest Abadal is one of the

researchers in the research group “Open Access to Science in Spain”. One of their objectives is to describe the situation of institutional repositories in Spain. They also monitor the situation of OA policies and journal copyright conditions, which are two of the most important factors for increasing the contents of a repository, according to Ernest Abadal.

The first open access repository in Spain was TDX. It was established in 2001 for the archiving of doctoral theses. Today there are 60-64 repositories in Spain (the number depends on the source). The majority of the repositories are fairly new, with 37% created since 2009. Educational repositories and learning objects play only a secondary role in Spain. The repositories are mainly established by universities (68 %) and the content is typically journal articles (close to 60%), theses and dissertations. Most repositories are established to provide open access to content from a certain area. However, the repositories will typically not include the whole scientific production of the institution. To increase the content, open access policies must be promoted further and the copyright of the papers published in e.g. journals must be known (at the moment information is being registered for Spanish journals in the Dulcinea database).



Figure 4 Ernest Abadal gave a talk on Spanish repositories.

DSpace is definitely the predominant technology platform behind repositories in Spain (61%). One application was described by Julià Minguillón, see Section 3.1. There are two service providers in Spain (harvesters/aggregators): Hispana and Recolecta. Recolecta contains scientific publications; Hispana includes academic information, press, archives etc.

#### *Open access policies*

Open-access policies pursue two main objectives:

- To help researchers to archive their publications in repositories and,
- To encourage them to publish in open-access journals.

Mandatory policies are clearly the most effective ones.

MELIBEA is a directory and validator of institutional open-access (OA) policies regarding scientific and academic work. As a directory it describes the existing policies. As a validator it subjects them to qualitative and quantitative analysis based on fulfilment of a set of indicators that reflect the bases of an institutional policy. <http://www.accesoabierto.net/politicas/>

Further information on open access policies and mandates in Spain can be found in the presentation.

#### *Conclusions*

Spain is advancing in the creation of infrastructures that facilitate open access. There are a large number of repositories and they have a good ranking in the international context. However, the number of repositories with learning objects is low and the content of the existing repositories must be increased.

It's necessary to adopt institutional policies to promote open access. There are other problems (user interface etc), but the single most important issue is to increase the content and for that reason policies are vital.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/766.ppt>
- The research Group: Open Access to Science in Spain (in Spanish): <http://www.accesoabierto.net>
- Melibea: <http://www.accesoabierto.net/politicas/?idioma=en>

## 4 The four themes

The seminar explored EdReNe’s four overall themes: which repository strategies work, how do we engage users and producers, which are the relevant standards to ensure interoperability, and how do members address the complex handling of intellectual property rights.

The presentations, the following debate and questionnaires will lead to a number of recommendations on these issues from the EdReNe network. A separate report with these recommendations will be published at edrene.org.

In the following the presentations are summarised.

### 4.1 Standards and interoperability

#### 4.1.1 ASPECT project’s initial results on the implementation of standards

Àgueda Gras-Velázquez, EUN, addressed standards and interoperability from a user perspective.

*A short introduction to ASPECT - Adopting Standards and Specifications for Educational Content*

In the ASPECT project technology providers and standards’ experts work with content providers to develop best practice approaches to implementing standards for both educational content discovery and use. Content providers apply these best practice approaches to a critical mass of resources in the ASPECT LRE. These resources are then validated with up to 40 schools in four countries in order to determine how the implementation of standards and specifications in the project leads to greater usability of LRE content.

The LRE (Learning Resource Exchange Repository) technology has been duplicated to make an ASPECT version. Use of the ASPECT portal is restricted to the partners and participating schools as it contains content from commercial publishers. The ASPECT LRE has an integrated SCORM player, automatically translated metadata in 6 languages etc. The same content can be accessed as web, Common Cartridge and SCORM.

A detailed time schedule for the test and development of the LRE can be found in the presentation.

#### *Results from the workshops*

At the moment the ASPECT project is consolidating the results from their workshops (October 2009) with teachers from Portugal, Belgium (Flemish part), Lithuania and Romania, 43 teachers in total. Àgueda Gras-Velázquez presented the preliminary results (the report will follow summer 2010).

Generally speaking: Users don’t care about metadata or standards. They care about whether they can find the objects, an efficient and easy to use search tool is essential. The teachers use Google to find educational material and they use Google almost every day. A large majority of the teachers in the project did not know the LRE.

#### **Facts about ASPECT**

ASPECT is a 30-month Best Practice Network supported by the [European Commission's eContentplus Programme](#) that involves 22 partners from 15 countries, including 9 Ministries of Education (MoE), four commercial content developers and leading technology providers.

As a result the ASPECT project will provide recommendations for changing the LRE. The users recommend e.g. elimination of “broken links”, searching for “volcano” in one language should return results in all other languages as well. However, resources in your own language are still very important.

Selected graphs are shown in the following.

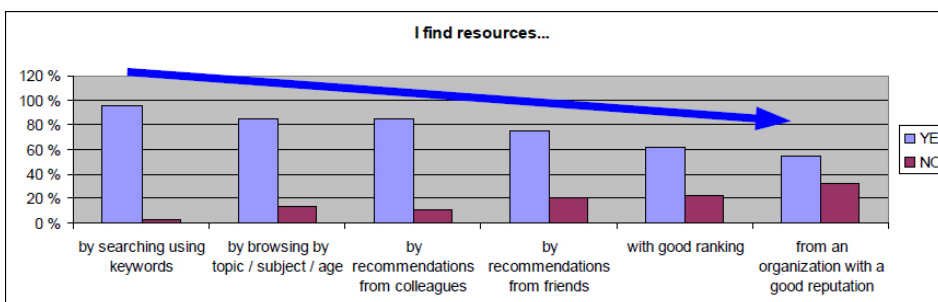
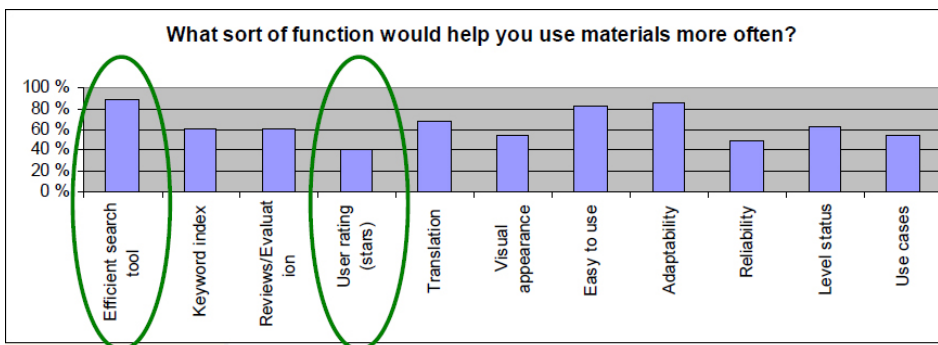
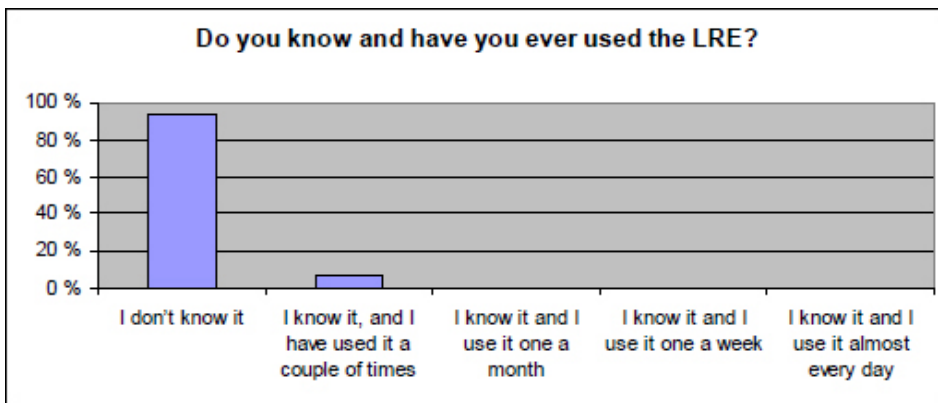
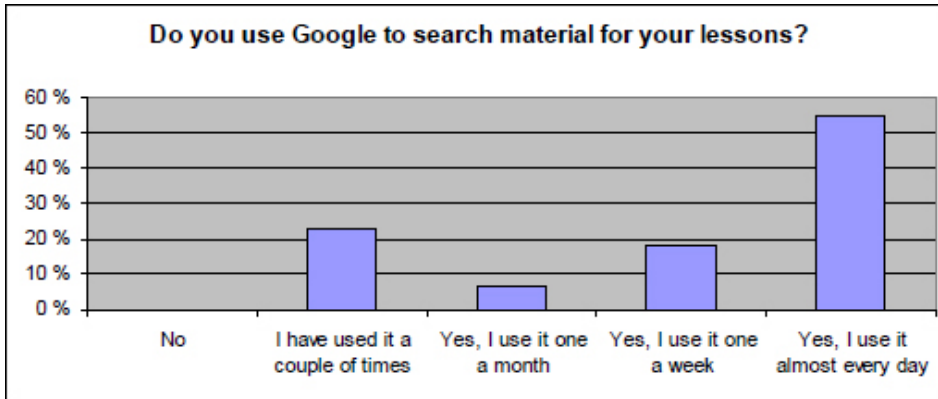


Figure 5 Results from the ASPECT workshops with teachers in LT, BE, RO, and PT.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/778.pdf>
- <http://aspect.eun.org/>

## 4.2 Rights issues

### 4.2.1 The impact of Creative Commons

This talk was given by Ignasi Labastida i Juan, Office for Knowledge Dissemination, Universitat de Barcelona, and Creative Commons Spain and Catalonia.

#### Plans for 2010

When EdReNe started Creative Commons had a project called ccLearn. This January Creative Commons announced a reorganisation of CC's open education project with the objective to focus CC's activities in the support of Open Education Resources (OER) - developing and explaining the legal and technical infrastructure required to make "open" work. Over the past year CC realised that ccLearn as a brand was known by the few. Most people did not access the ccLearn website; they accessed the Creative Commons site.

As a consequence of this reorganization we can expect to see more OER-related content and news on the CC webpage.



Figure 6 The new Creative Commons strategy focuses on OER.

The plans for 2010 can be seen in two areas:

1. Materials for the education community on legal aspects (to make it easier for teachers). Course model for lawyers on open licensing addressing education-specific issues. Education use cases and exploration on copyright limitations and OER production.
2. R&D on metadata, best practices. The search engine DiscoverEd (developed in ccLearn) will be improved. CC tools for OER platforms. Video explaining CC & OER. Metrics regarding CC adoption (how many uses CC etc.).

### *Back to rights issues*

It is very important to mark the rights in repositories (information, reuse, rights with contents and interoperability among different licenses). “We must know if we want to allow users to reuse and remix and under which conditions and requirements”. Ignasi Labastida added that: “Not mentioned equals not allowed”.

The CC license is sometimes chosen because it is “cool” or “look nice”. However, you should instead consider:

- Kind of exploitation allowed
  - Reproduction, distribution, public communication
- Restrictions on use
  - NonCommercial, NonDerivativeWorks
- Requirements
  - ShareAlike

In EdReNe reports CC-By is recommended. Ignasi Labastida underlined why that could be a recommendation:

- Allows unrestricted adaptations, translations,...
- Wide use without restrictions on derivative works
- Compatible with any free license (legal interoperability)
- Requires attribution (non endorsement) and respect for moral rights where exist

Questions:

The current version of CC? The latest version of CC (3.0) was released in 2008. Some countries haven’t moved from 2.0 yet, although they should. “Version 3.0 of the licenses is more robust and clarifies some aspects related to moral rights and rights collective management,” explains Ignasi Labastida i Juan. “We now have many users, but there is still a lot of work to do to explain the meaning of using a CC license in specific fields.”

Educational licenses - can you explain it a bit further? “Share-alike-for-education-only” has been a long ongoing discussion, at the moment a specific license for education is not likely. One reason is that it is very

difficult to decide what “education” means. If the license should be added this must be defined in the process.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/767.ppt>
- CC in education: [http://creativecommons.org/education?utm\\_source=ccorg&utm\\_medium=ccedu](http://creativecommons.org/education?utm_source=ccorg&utm_medium=ccedu)
- CC Learn news release: <http://creativecommons.org/weblog/entry/20292> and a follow-up: <http://creativecommons.org/weblog/entry/20329>

#### 4.2.2 *New possibilities and threats for authors in a digital world*

Based on his own experiences, Thomas Meloni Rønn, BFU, presented the possibilities and threats for an author and publisher in the digital world. The talk was given without the use of a PowerPoint. The note taker’s resume is provided in the following.

“My background as a historian has taught me that nothing is forever. I know that professions will come and go. If the world does not need publishers they will eventually disappear. When I started as a publisher and a writer, I had to establish a business. Being both a writer and a publisher is certainly cutting the costs and making everything more efficient. However, it is a challenge as well.”

“I learned about the Publishers Association in Denmark (e.g. BFU). One of their agreements with the educational sector ensures local advisory institutions in the regions a copy of your book (learning material). These copies can be borrowed by teachers when they are choosing learning materials for the school. To have your book distributed via this agreement, the publisher is required to register the book at Materialeplatformen.emu.dk – the Danish educational repository. In the beginning it was ‘something I had to do’. However, when I looked at the traffic on my website I discovered that some of the users actually came from Materialeplatformen.”

“Whether you are a small or large publisher there is no difference when you are in the repository. My book about Napoleon is presented for the teacher in the same way as the books from the large publishers. That represents an opportunity for me. I started qualifying my registrations in the repository. Today 75% of the users who reads about my book on Materialeplatformen click on the link to my website - Having a repository as Materialeplatformen means that I can concentrate more on writing books instead of marketing.”

“The one thing that I fear most is two keyboard shortcuts: Copy and Paste. In Denmark we have SkoleKom – a forum enabling teachers to discuss and share information. However, I also found my book in the forum. That’s actually okay, as I consider that to be marketing. The problem is that the teachers also took bits and pieces and assembled them in new ways. In this way they will eventually stop buying my book as they can ‘write their own’. As an author I cannot work for free, I have to make a living.”



Figure 7 Thomas Meloni Rønn presents the possibilities and challenges within digital publishing.

“My recommendation to the repository owners is: Should writers and publishers use your repository you also have to protect the copyrights of the content provider.”

Question: Teachers would like to do mash-ups - shouldn't you exploit the market opportunity and work with the teachers? It is acceptable for me that teachers use my things in their teaching, the problems is when they start to distribute their own versions. We need to find a solution in this situation.

### 4.3 Repository Strategies: On-line resources and repositories, the strategies of Andalucía

The presentation was given by Juan Rafael Fernández, Andalusian Educational Authorities and secondary school teacher.

#### *The And@red ICT Schools (2003-2009)*

The most important ICT project was initiated by law in 2003. The law stated that “hardware will have to be compatible with operating systems based on free software”.

A massive deployment followed, maybe the largest single educational network in the world, administered centrally by cga (Seville). Cga provided a help desk, managed the free software distribution (a customized distribution based on Ubuntu and educational software), the schools local networks, and they administered two servers in each school, providing firewire, proxy, cache, NFS homes and contents service.

#### Facts about Andalucía

- 8.200.000 inhabitants
- 1.500.000 students
- 4000 schools
- High unemployment rates.
- A region qualifying for EU aid.

Further investments in computers for the classroom meant that by 2009, 60% of Secondary schools and 40% of Primary schools were ICT schools. It was planned that by 2012 all Andalusian schools would be ICT schools. However, plans have changed, see below.

A repository was provided in 2006. It is an index of the quality resources already in Averroes, as assessed by experts in each of the educational fields. Social tagging, tag clouds and even personal portfolios are possible.

#### *Escuela 2.0*

In 2009 a new national plan was presented, the 2.0 school plan. It covers Spain, not just Andalucía.

For all students (10 years and up) the Spanish government would pay half the price of the computer. The plan encompasses WIFI connectivity and whiteboards for the schools as well.

However, many questions were raised: who pays the second half of the computer? Which operating software is on the computers? And what about educational software?

In Valencia they decided to reject the project. There is nothing relevant for education at the computers, has been the criticism.

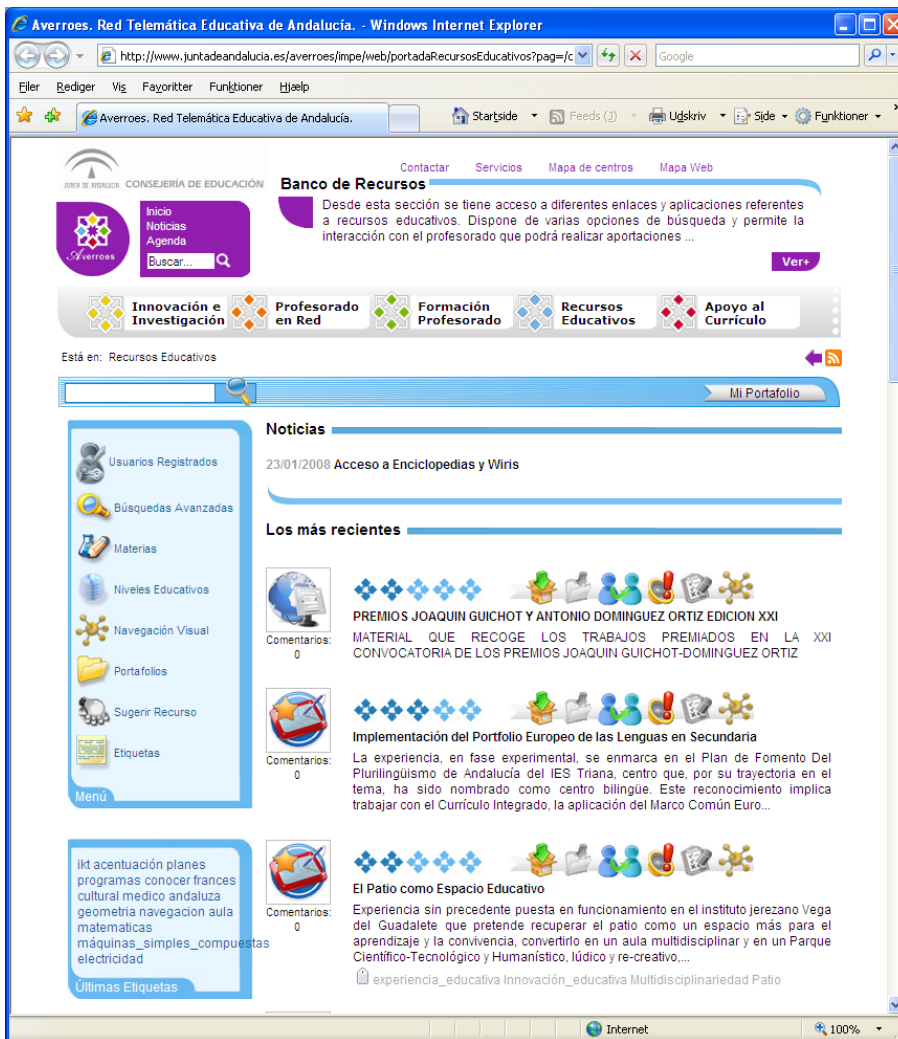


Figure 8 Andalusian repository.

### Escuela tic 2.0

This 2.0 ICT project is a mixture of the two projects, the Andalusian model and the national one. It is massive, with centralized administration, free software and content, a school server with Moodle and MediaWiki, computers to the students, interactive whiteboards etc.

In the beginning of March 2010, 173.500 computers had already been delivered.

Furthermore, a digital content backpack (pendrive called mochila digital) is provided and it was given to all teachers before the project started. The «mochila digital» is a 10 Gb selection of teaching resources (lesson plans, whole units, web quests, videos...) for initial training and initial work with the Project's laptops.

### Is a repository enough?

Juan Rafael Fernández explained that teachers need sufficient plural educational resources. There must be more solutions for each topic so that the teacher can choose the ones that fit. It must be possible to reuse, mashup, and modify the resources. The solution is the creation of resources with a Creative Commons license and an active resources database.

### *The three layer strategy*

The three layer strategy was introduced by the former government and it is not cleared by the new government yet.

1. The Lesson planning machine suggests lessons suiting the teachers ICT and pedagogical level. Furthermore, it suggests options that might be of interest (above level). It operates with 5 sorts of sequences, app. 200 kinds of activities and atomic resources. In this way teachers create personalized sequences, according to teaching styles and pedagogical and digital competence
2. Averroes repository in service since 2006: learning objects, LOM-ES, pre-agrega selection.
3. Agrega is the national repository of learning objects; the third layer is the Andalusian node.

Further information:

- The presentation (converted to an mp4 file):  
<http://files.itlearning.com/data/826/open/CO15/788.mp4>

## **4.4 Engaging users and producers**

### **4.4.1 Open Content, Wikiwijs and Innovation platform**

Linda le Grand, VO-raad, Netherlands (Board of Secondary Schools).

One of the goals with the project Innovatieplatform-VO (innovation platform) is to inform teachers that there are other learning materials than books. The use of open digital content must be stimulated. The schools should be able to use both open and commercial content, digital as well as folio content, says Linda le Grand.

The open content exists - the teachers must also be able to find it!

With the help of Kennisnet the project built a portal upon EduRep. At the same time, another similar project, wikiwijs, started. The wikiwijs project is larger in concept and covers more educational areas as well as commercial content. The two projects have now been joined. The goal by 2012 is to have enough content to cover all competences.

This content initiative is supported by actions in many different areas.

The competences of school management and teachers will be improved. Sometimes there is a gap between the management and the teachers. The plans made by management are fine. However, the teachers do not always know how to implement them.

#### **Facts secondary education NL**

Students are in the age  
12-18 years

1.000.000 students

750 schools for secondary  
education



Figure 9 Wikiwijs - open digital content.

Learners and teachers should use the learning objects. At the moment the teachers using the portal are the early adopters. They are mainly working at schools that already decided to use digital content or they are teachers with a personal interest.

Quality besides quantity is needed. First of all, there must be quality in metadata. In EduRep the fields that best suits the search for content, are not mandatory, e.g. the pedagogical metadata. In this project it has been decided to make the fields “course subject” and “learning level” mandatory.

Quality in content is important as well. Now a quality system is under consideration, SLO assist on this.

At the moment the users of wikiwijs are ‘consumers’ instead of ‘prosumers’. They are looking for ‘out-of-the-box’ content to use in their classes. The project works with schools to make the teachers share; many obstacles must be tackled in this field.

A simple use case is: A teacher develops content, advice is given and the content is reviewed. If the content is published you can find it on wikiwijs. It can be previewed, downloaded and imported in VLE (organized in a way proper for their class). The content may now be used directly from the VLE. Afterwards you can publish a review in wikiwijs. The use case is illustrated in the presentation.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/787.pptx>
- Wikiwijs: <http://www.wikiwijs.nl/sector/>

#### 4.4.2 Building systems for mobile learning, knowledge and resource sharing

Jill Attewell, Technology for Learning, LSN, gave a talk about MoLeNet. By mobile learning they understand exploitation of ubiquitous handheld (or very portable) hardware and wireless and mobile networks to

facilitate, support, enhance and extend the reach of teaching and learning. It should be added that “handheld” includes many of the technologies young people have, not just mobile phones and laptops, also PSPs, Nintendo DS etc.

MoLeNET is a deliberate attempt to move mobile learning from R&D into mainstream teaching and learning. The target group for this UK initiative is the 14+ age group, including kids with problems.

The funding is a shared cost program. The government pays hardware etc. and the schools pay the work by MoLeNet (expert mentor allocated to each project, face-to-face and online seminars, VLE, evaluation etc).

In phases 1 and 2 of MoLeNET (2007-2009), 62 projects, 115 colleges and schools, and more than 21,000 learners were involved. At the moment MoLeNET is in phase 3 (2009/10). It will involve approx 10,000 learners, 23 macro projects and 20 micro projects and 8 mobile learning Academies (centres of mobile learning staff development excellence and helping to support micro projects).



Figure 10 Jill Attewell presents MoLeNet.

### *The systems*

MoLeSHARE allows participants to share everything relevant (documents, videos, case studies, lessons plans, web links etc.). MoLeSHARE is open for use to anyone. However, should you wish to upload resources you must have an e-mail at one of the participating schools (introduced to restrict the use to relevant people).

Generally speaking, MoLeTV is like YouTube without advertising and inappropriate videos. MoLeTV includes relevant curriculum tags, ratings, user comments, and automatic conversion for several mobile friendly formats (which is different from e.g. YouTube).

The systems must be very quick and easy-to-use when teachers should participate. Teachers are busy and they are met with many requirements on a day-to-day basis. Jill Attewell agreed that it is difficult to get teachers engaged. She asked: are they too polite? Busy? Lazy? Do they lack confidence? To engage teachers they will try to establish a community, with the use of mentors, network meetings, Moodle per group etc. However, the effect of these initiatives is to be seen.

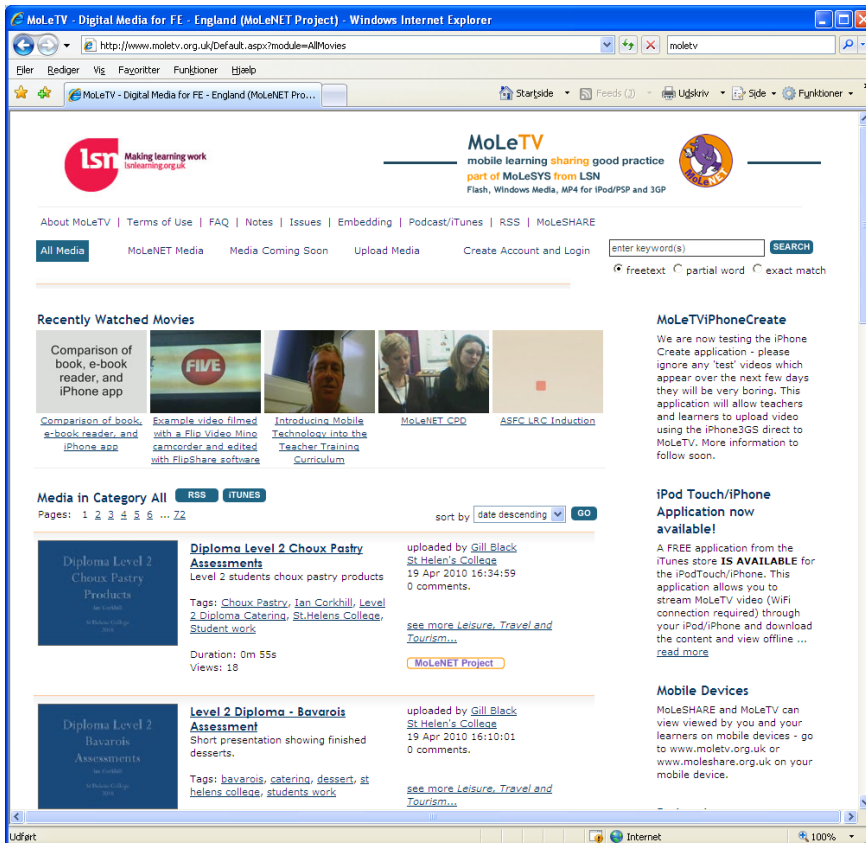


Figure 11 MoLeTV.

MoLeDev is an easy-to-use authoring tool for creation of mobile learning materials. It allows teachers to assemble small shared elements into a personalized resource. The elements are saved separately to facilitate future sharing and reuse. The teachers must specify whether they want to share their elements. If not, they will be deleted automatically within a certain time frame.

Jill Attewell ended by underlining that the mobile resources are not just a converted version of existing learning resources. “You have to look at the pedagogy to make them fit a mobile learning situation”.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/772.ppt>
- <http://lsnlearning.org.uk/>
- [www.molenet.org.uk](http://www.molenet.org.uk)

## 5 Top issues 2010

EdReNe members give an update on top issues in their country and/or organisations. Issues include strategies to inspire teachers to share, travel well criteria, open educational content, new repositories, automatic metadata generation, survey results and much more.

### 5.1 BECTA – an update

Andrew Kitchen and Alex Kidd, Becta, gave a short introduction to six of their ongoing projects.

#### *Content Ecosystem progress*

Schools face a challenge in finding, using and sharing quality digital learning resources. The strategy outlines what needs to happen to support schools in England. The strategy was published June 2009 (<http://industry.becta.org.uk/display.cfm?resID=40418>).

The goal is to make a self-sustainable solution. The implementation roadmap (four phases) was published August 2009 (<http://industry.becta.org.uk/display.cfm?resID=41020>) and procurement for the pilot (broken down in 4 lots: metadata index and search function, aggregation service to enable e.g. small content providers to take part, sustainability issues, and engagement) was announced November 2009 (<http://industry.becta.org.uk/display.cfm?resID=41250>).

The Project Initiation Document is being written currently, due end March 2010. Pilot starts April 2010 with an expected end March 2011.

#### *Persistent Identity and resolution project*

A small example: an ISBN number for a book is persistent. However, on the web a URL is not persistent; they change all the time, which is one of the problems to be tackled. Becta provided a grant to [UKOLN](#) (an organisation funded by JISC and MLA) to produce a discussion document for industry. The brief included the following tasks:

- What types of organisation need advice and guidance about persistent identity and resolution?
- What are the real issues to be tackled?
- What are the arguments and views held by the differing parties to solve these issues?
- What technological and methodological solutions actually exist?
- Which technological or methodological solutions are appropriate for consideration by each of the types of organisation identified?

The report is in the review phase at the moment. It will be shared with the EdReNe members. Further input is appreciated.



Figure 12 Andrew Kitchen and Alex Kidd, Becta.

### *A metadata profile for Digital Learning Resources*

Becta is working with stakeholders towards a profile that can be used as a standard by the public sector and commercial providers. The draft for discussion includes:

- 5 mandatory resource properties: index identifier, Title, Description, Publisher, and URL (link).
- 5 mandatory pieces of metadata record information: date, identifier, submitter or creator, schema (LOM, Dublin Core, no schema, this field will tell what the schema is), group visibility (who is allowed to see it).

The results will be used in the “ecosystem” pilot. Becta is interested in discussing metadata and vocabulary experiences.

### *IPR & Copyright for Digital Learning Resources*

The UK intellectual property office is now reviewing the educational copyright exceptions. The objective of the review is to finally add whiteboards and the use of learning platforms/VLE. Format shifting is still not addressed (e.g. copyright when converting an mp3 file to another format).

Becta is exploring standard licenses for digital content and invite ideas or experiences others have within this field.

### *Content Packaging Application Profile*

Becta is working with Research Machines (RM) as a prime contractor. Some work is being subcontracted to Colin Smythe, IMS’ Chief Specification Strategist. A UK based consultancy firm called Edicts assists on Stakeholder engagement.

The project is on schedule. The requirements for a content packaging profile based on stakeholder engagement have been delivered and the delivery of the technical specification is expected at the end of March (2010).

The solution is based upon IMS Content Packaging, incorporating support for SCORM and SCORM runtime interaction. It is also being developed to support future alignment with Common Cartridge – inclusion of Basic Learning and Teaching Interoperability and other features.

There will be a best practice guideline for learning platforms and content providers to support conformance. Finally, a roadmap for future development of features that are not currently available through other specifications will be produced.

### *Interactive Whiteboard Common File Format*

The technical specification was provided during mid 2009. Furthermore, there is an open source code library to support persistence of Common File Format compliant files, and a viewer application called ‘Board Viewer’ for viewing Common File Format files and testing purposes. The suppliers have been working towards adoption and implementation of the new format. Becta has created a suite of tests for assessing Common File format compliance.

At the same time Becta is presiding over a new ICT Services Framework for UK schools. All new schools will be using it (‘Building Schools for the Future’ schools are committing to use this framework exclusively).

The important news is that compliance with the Common File Format will form part of this framework. If the school is using the framework the suppliers will not be able to sell their products to the school if they do not comply with the Common File Format.

A EUN working group is producing guidance for European procurement, which is set to take the Common File Format work as a key driver.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/773.ppt>

## 5.2 Update from Intrallect - recent work

Charles Duncan, Intrallect and Neil Livesey from Learning and Teaching Scotland presented news on three different areas.

### *Business case study*

The study investigated, identified and articulated the evidence for a range of business cases and models for sharing learning materials within the UK Higher Education community.

A set of models was developed to illustrate the benefits of a collective approach to a range of stakeholders in a format that is accessible and usable by the different communities. The project focused on two specific aspects of sharing: open access and subject-based sharing (app. 20 repositories were studied).

Find the report [here](#).

### *Automatic metadata generation*

Metadata is important for the discovery and curation of resources. Creating high quality, consistent metadata can be time-consuming and expensive. Therefore automatic metadata generation offers considerable benefits. However, automatic metadata generation is not an end in itself. The benefits are realised only when the metadata is used.

Types of metadata which can be generated automatically:

- Subject
- Name
- Geospatial
- Factual
- Bibliographic
- Usage
- File format

A report including use cases is provided for each of these metadata fields, some of them might seem simple e.g. the file format metadata is often deducted based on file extensions. However, file extensions are not always reliable and more reliable methods exist.



Figure 13 Charles Duncan, Intrallect.

A principle that should be considered is “just in case” metadata (usually created when you deposit the content in the repository) versus “just in time “metadata (just as important and created when used).

#### *National assessment resource (NAR)*

This topic was presented by project manager Neil Livesey from Learning and Teaching Scotland.

NAR was introduced by the former Minister Fiona Hyslop. The purpose is to assist in meeting the Scottish Governments objectives set out in Assessment for Curriculum for Excellence – Strategic Vision and Key Principles.

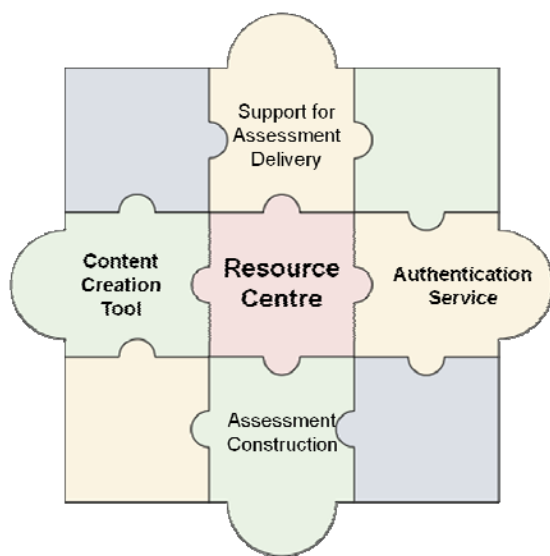


Figure 14 The 5 component infrastructure of the NAR.

The infrastructure of NAR consists of:

1. Simple Content Creation tool for the development of resources that would be used to produce content (see below).
2. Repository to store items (in many formats) for both secure and non secure access.
3. Assessment construction component for the creation of assessments.
4. Assessment delivery component for print or online solution.
5. Authentication service for non Glow users.

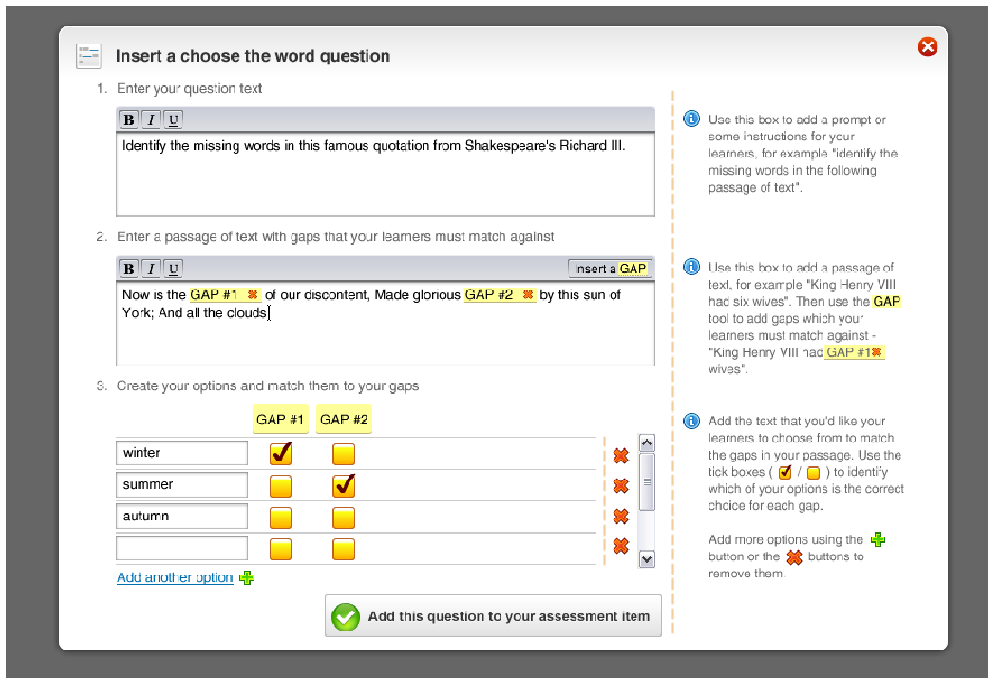


Figure 15 Simple Content Creation tool in NAR.

Integration with existing services is very important; open standards are used as the core. One of the existing services NAR is integrated with is GLOW. NAR is using their authentication service.

NAR will be ready in September 2010.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/774.ppt>
- Business case study: [http://www.intrallet.com/index.php/intrallet/knowledge\\_base/research\\_projects/good\\_intentions\\_improving\\_the\\_evidence\\_base\\_in\\_support\\_of\\_sharing\\_learning\\_materials](http://www.intrallet.com/index.php/intrallet/knowledge_base/research_projects/good_intentions_improving_the_evidence_base_in_support_of_sharing_learning_materials)
- Automatic metadata creation: [http://www.intrallet.com/index.php/intrallet/knowledge\\_base/research\\_projects/automatic\\_metadata\\_generation\\_use\\_cases](http://www.intrallet.com/index.php/intrallet/knowledge_base/research_projects/automatic_metadata_generation_use_cases)

### 5.3 Latest news from Share.TEC – innovation in Teacher Education

The status of the Share.TEC project was given by Fred de Vries, Share.TEC.

The project supports innovation in the Teacher Education (TE) field by facilitating access to digital resources, sharing of reuse experiences and development of TE expertise across national boundaries.

“In Europe we need to collaborate. Instead of new repositories we must be able to gather the resources” says Fred de Vries.

Share.TECs primary users are teachers: teacher educators, student teachers and practising teachers. The stakeholders are e.g. educational repositories, MoE, content providers etc.

Share.TEC will offer unified access to existing TE resources through a web portal. The resources (open and commercial) come from sources across Europe and comprise of lessons plans, teaching modules (not K-12 students directly), best practises, reference materials, etc.

Share.Tec uses a TE specific LOM-based application profile where section 9 and 10 includes a teacher education ontology based on an ontology originally developed by UNESCO. The challenge is to get the section 9-10 metadata added to the existing repositories and materials.

The metadata is harvested from repositories via OAI-PMH or created by users via the Resource Integration Companion Kit. Content without metadata (and they have such content) is addressed by automatically metadata collection methods.

The web portal will have ratings, tagging, social networking capabilities and different search facilities: queries with familiar TE terms, simple and advanced query filtering, semantically-supported search, and personalization functions (preset search values, recommender, etc.).

Fred de Vries ended with an invitation to join the initiative should you have a repository for teacher education.

### Share.TEC

Share.TEC stands for “Sharing Digital Resources in the Teaching Education Community”.

A 3-year project (2008 to 2011)

Co-funded by the European Community’s eContentPlus programme.

Share.TEC is devoted to fostering a stronger digital culture in the TE field and to supporting the development of a Europe-wide perspective among those working in and with the TE community.

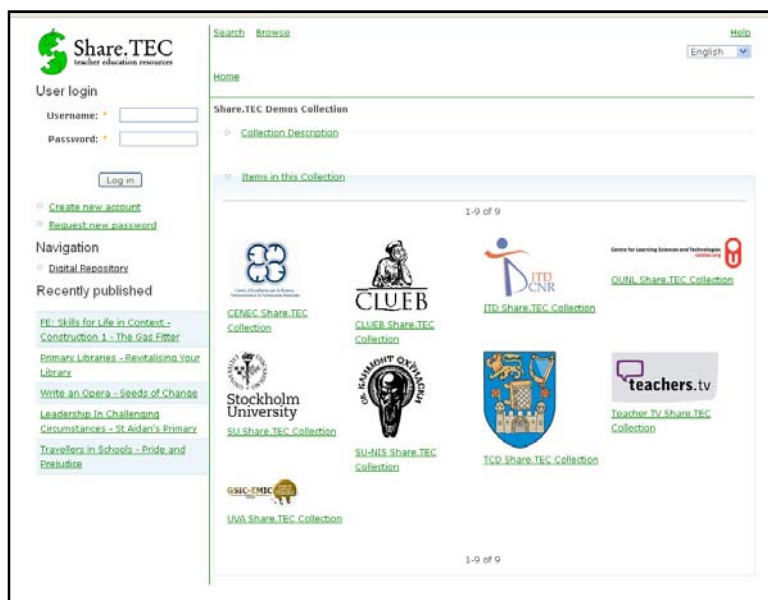


Figure 16 A prototype. The final repository will be ready summer 2010.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/775.ppt>
- The project website: <http://www.share-tec.eu/>

#### 5.4 Inspire – the role of digital learning resources in MST education

Àgueda Gras-Velázquez, EUN, introduced the results from the Inspire project. The Inspire project (Innovative Science Pedagogy in Research and Education) ended November 2009. The purpose was to challenge the lack of interest of students to start scientific studies and more widely to extend the supply of scientific specialists and develop a scientific culture in European countries.

During the project period questionnaires has been used to gather data on the use of digital learning resources (62 schools in 5 countries). The purpose was to:

- Observe the impact of these new teaching methods on pupils and on their motivation.
- Analyse the pre-requisites for enabling teachers to integrate these new techniques in their pedagogy.
- Identify the critical success factors to be mastered at teacher and school level for the generalization of such practices.



Figure 17 Àgueda Gras-Velázquez gave an update on two EUN projects.

Or more generally put: Is it true that students with learning resources are happier students?

The attitude (students and teachers) was measured before and after resources were used in the classroom. Most of the digital learning resources were in English. Technical terms etc. were translated to the local languages to ease the use in the classroom. However, the results indicate that this is not sufficient; the learning resource itself must be translated as well to be used significantly in class.

According to the teachers (190 teachers completed the piloting):

- The highest impact of learning resources (85 %): they facilitated more autonomous learning of students (students could work in their own pace).
- 75 % answered that learning resources made it easier for students to understand and learn MST.
- 73 % answered that the resources stimulated their own interest and motivation for teaching MST.
- 70 % noticed that the resources stimulated students interest and motivation for learning MST

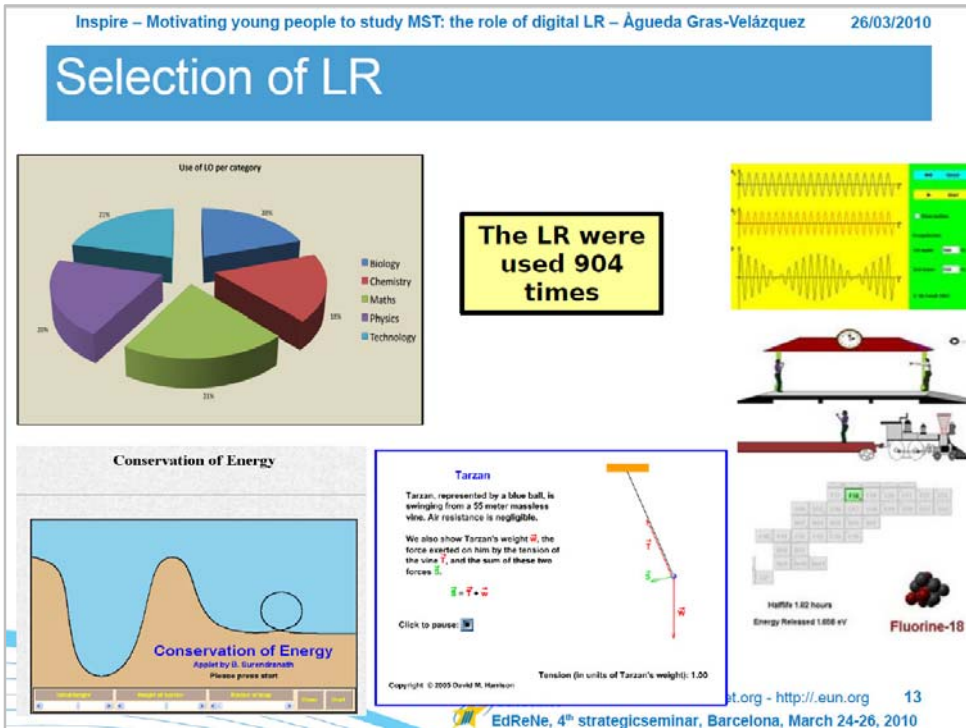


Figure 18 Different learning resources. The resource used the most was "conservation of energy" as this is in the curricula. It is not the design etc that determines whether a learning resource is used, it is the curricula.

According to the students (3411 responded):

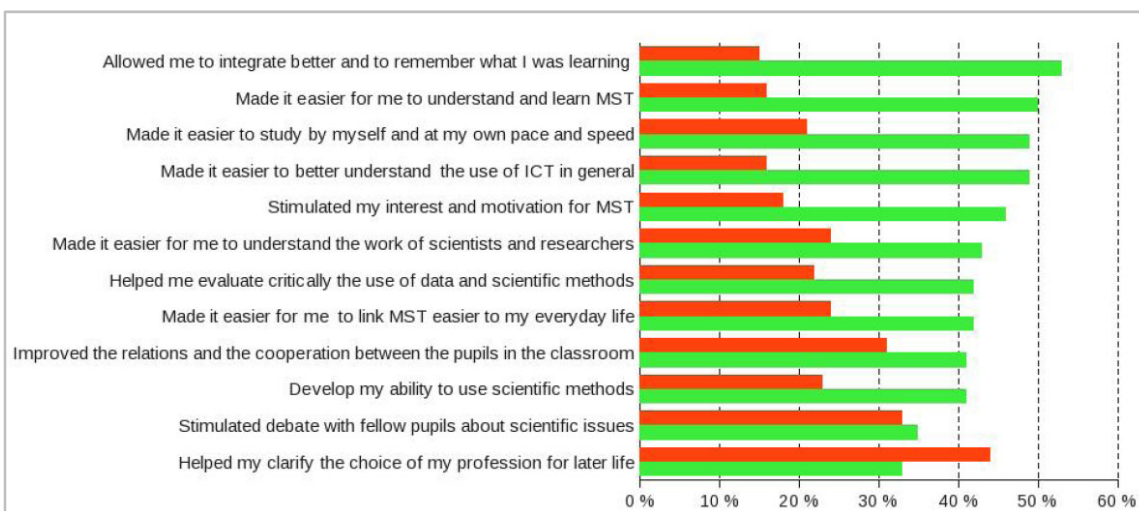


Figure 19 Impact of using learning resources on the students. Red bars represent “no added value” answers. Green bars represent positive answers. Missing percentages correspond to “undecided” answers.

The use of learning resources shows greater impact on boys than on girls. The impact decreases with the age, especially among female students. The number of learning resources used has no real influence.

Generally, the use of digital learning resources has a positive impact on MST education. However, special attention has to be placed on technical requirements and localization of the resources.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/776.pdf>
- The final report: [http://inspire.eun.org/images/2/22/Inspire\\_Report\\_final-insight-report.pdf](http://inspire.eun.org/images/2/22/Inspire_Report_final-insight-report.pdf)
- <http://Inspire.eun.org>

## 5.5 Scientix - The Community for Science Education in Europe

Àgueda Gras-Velázquez, EUN, introduced a new project carried out by EUN for the DG Research. Scientix is the new web-based community for Science Education targeted at teachers and researchers. It aims at setting-up and managing a user-friendly information platform to facilitate regular dissemination and sharing of progress, know-how, and best practices in science education across the European Union and the member countries of the Seventh Framework Programme. The portal will be available in six languages: English, French, German, Spanish, Italian and Polish. Furthermore, the users should be able to find the resources in the 23 EU languages. The resources will be translated when more than one teacher requests it. The users can assist with translation.



Figure 20 The Scientix portal.

This new platform/portal should collect information from a range of projects and exist after the projects have ended. Each project description will be divided in three sections/pages. The LRE is behind the portal and ensures that the content can be presented in different ways.

Besides the website, several events and workshops will be organized during this 3-year project. The main event will be the Scientix conference May 6 - 8, 2011, which will promote networking among the science and education community and provide feedback on the services offered online.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/779.pdf>
- <http://scientix.eu/>. The portal will be launched May 2010.

## 5.6 Translation and adjustment of Learning Resources

Christina Szekely, Skolverket, addressed the concept of “travels well resources” and how that might possibly be ensured.

The exchange of learning resources represents an opportunity for all European countries and not least in a small language area as e.g. Sweden. Swedish teachers could really benefit from the resources in the LRE, Commons etc.

However, in most situations the resources must be translated to Swedish and they must often be adapted to the local context and learning goals. Therefore, it is essential to know more on the following issue: “how difficult is it to translate and adjust existing digital learning resources?”

This issue was recently addressed in a study made by Krister Widell, Metamatrix. The focus was LRE resources for natural science. As Skolverket takes part in the eQNet project the report has been translated into English.

It must be added that “travels well” is not merely a question of technical adaptability. Issues as metadata, cultural context, copyright and accessibility must be addressed as well. Though, the technical format is fundamental when you wish to translate, adjust, edit, recycle, or develop it further.

The technical formats used for the resources tend to be more and more complicated. While plain html and Office files can easily be accessed and translated, it is much more demanding when a resource is a combination of content fragments from different websites, a Flash file, etc.

Generally, Flash files are difficult to translate or transform whereas SVG files are easy to translate. The resources required to translate e.g. a Java program strongly depend on how the program was written in the first place; often they have not been designed for portability. PDF files are very common; however, they are often “locked”. The use of proprietary file formats for Interactive Whiteboards

“Responsible authorities should develop, publish and distribute information about the significance of technical formats when creating digital learning resources.”

“Standardization efforts should be supported.”  
Christina Szekely, Skolverket



Figure 21 Christina Szekely presents a study on “Travel wells” resources.

has so far limited the sharing of these resources. The Becta initiative might change this in the future, see Section 5.1.

*Questions to consider when developing learning resources:*

Who will use the learning resources?

Are there any additional groups beyond the primary users?

How is the ICT environment organized?

How do we handle accessibility for disabled users?

Are we using the optimal file formats or are we working by routine?

Are we using open source software and open file formats?

Is it possible to make the source files available?

If no source files are being available, can we tell the users how the textual content is made accessible (e.g. readme files)?

Is it possible to describe the technical portability by using some metadata standard?

Did we follow good programming habits when we created the learning resources?

How does the technical structure of a learning resource look like? Is it built modularly, with small, independent objects or is it built into a unified whole?

Should it be possible to download, translate and develop the resource?

Is form and design more important than the level of portability? Copyright issues?

Comment: It was suggested that the original and “open” file should be uploaded to the repository together with the learning resource.

Further information can be found here:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/780.ppt>
- The eQNet project: <http://www.eqnet.eun.org/web/guest>

## **5.7 Dela – an online teacher community**

Niklas Karlsson presented a large Ning community called “Dela” (Share). It was founded by Niklas in May 2009. It is an online community for education and collaboration. It is based on voluntary work.

The online community has 1152 members, primarily teachers from primary, secondary and higher education, though some librarians and a few politicians are members as well. At the moment there are 68 groups, e.g. How to use Facebook in education, Wiki, Podcast, and Google Apps. A majority of the discussions groups are related to the use of IT and new media in education. However, more groups are starting to discuss subject matters within Biology, Math etc.

A Ning community is a good first step for new teachers; it is easy-to-use and safe and it is quite similar to Facebook.

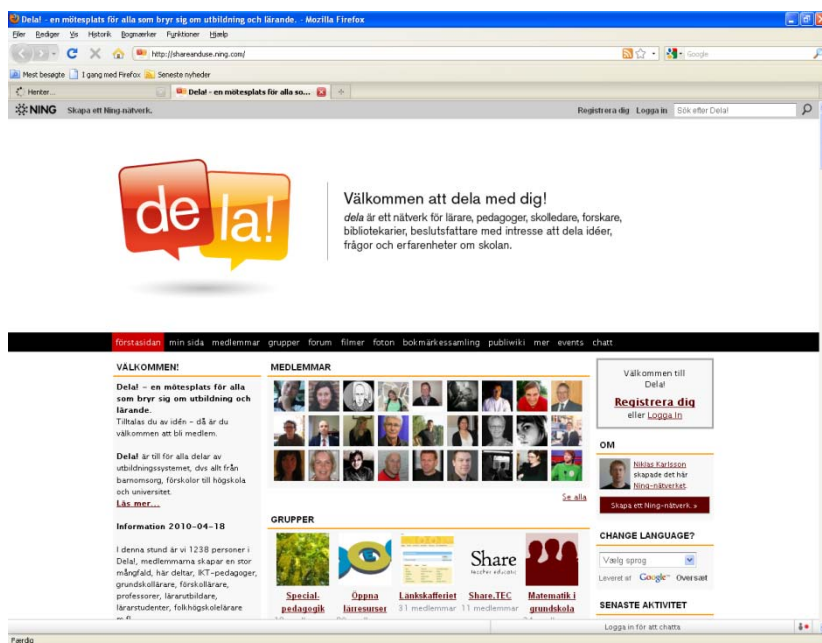


Figure 22 The NING community dela.

Niklas Karlsson started the project out of a need to discuss pedagogical ideas across the sector, with an aspiration to improve lessons and find and adopt new ideas for teaching. He knew D&B, a similar Norwegian Ning community (<http://delogbruk.ning.com/>). They helped with guidance during the first phase.

The administrative staff of Dela has drawn some conclusions about open social teacher networks:

- It takes at least two or three enthusiastic volunteers to operate such a network (welcome members, maintain and run the service, etc).
- It takes time for the network to establish consistent routines, build a feeling of community and reach a critical mass of new members.
- The majority of members are still consumers, how do we encourage them to become contributors?
- There is a danger of key members losing interest since there is no financial compensation for their work. You cannot always rely only on members' goodwill. Networks need some form of financing and structure.

Some questions from Niklas to the EdReNe members:

How many online networks for teachers will exist in the future? Do we need a national or European network? What do I need as a teacher to improve my teaching? If we need a national network who runs it? How will a network look like in 5 years time? Do we need another network to work with students? Is a network more or less successful when funded by the government – does these networks driven by voluntary work have an advantage?

These questions were not answered at the Strategic Seminar. However, it was commented that a self-generated initiative as Dela can have more credibility than a national driven one. It was also suggested that

national agencies should support initiatives as Dela, while remembering that a national agency also have to support the teachers who do not take part in such communities.

Further information:

- The presentation: [http://slides.diigo.com/list/niklas\\_karlsson/presentation-of-dela?mode=full&sid=32195](http://slides.diigo.com/list/niklas_karlsson/presentation-of-dela?mode=full&sid=32195) (Firefox)
- Dela: <http://shareanduse.ning.com/>

## 5.8 Update from the Portuguese School Portal

José Moura Carvalho, DGIDC, introduced the new Portuguese School Portal launched by the Ministry of education in June 2009. The portal is divided in four sections (tabs): Schools (in the future information on the schools themselves), resources, news, and a project on introducing computers in the primary schools.



Figure 23 Portal das escolas - a Portuguese School Portal.

The learning resource tab is an educational repository. The most recent, most voted, and most visited resources are listed. Furthermore, search facilities and a tag cloud is provided. By the way, the most visited resources are science, math, and history in primary education.

The school portal has 9000 registered users (a total of 150.000 teachers in Portugal). The repository contains 1500 resources (900 validated) mostly produced by teachers in teacher-training courses. A lot of interactive resources (Flash, etc.) but also the traditional ones (Word etc).

Furthermore, the school portal includes 1.500.000 scanned pages of magazines and newspapers (1910 - ). They are behind login.

The LRE metadata application profile v4 is used (member of ASPECT). The LRE thesaurus has been translated into Portuguese. Other standards include OAI-PMH and SQL. SCORM and Common Cartridge are not used. As a matter of principal they do not have “packaged content”, it is not necessary, although many schools have Moodle, they do not think the teachers need a “certain sequence”. The teachers should be able to use the content in the sequence they want.

A team of approximately 30 teachers validate the content and metadata (scientific mistakes, appropriate language to learning level, gender problems, metadata, rights etc.). They do not validate pedagogical value. There is open access to content created by teachers. The remaining content is only accessible to registered teachers (i.e. the newspaper archive).

Future plans include sections on educational blogs maintained by the teachers, open source software, Web 2.0 tools, mobile technologies and the use of GIS. The plans also include initiatives to increase the use of the portal and the number of user generated resources. More collaborative tools should be added. At the moment the portal only has user ratings; they wish to add user comments, forums etc.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/782.pptx>
- The portal [www.portaldasescolas.pt](http://www.portaldasescolas.pt)

## 5.9 Junior Virtual Assembly, a new Portuguese project

Rui Falcao, i.zone and EduWeb, presented a new project from i.zone interactive media. i.zone Interactive Media is member of the tice.pt network.

Following the Technological Plan for Education, which distributed more than 500,000 computers to schools in 2008-2009, the years of 2010-2012 will be years for digital content both at home and in the classroom. There is also, a growing involvement of Local Government in schools management (decentralization process).

The purpose with the project is to create an Educational Portal for schools, adapted to the municipality. The Portal contains:

- A virtual community.
- Digital educational didactic content.
- Other digital content (citizenship, civic participation, introduction to politics)

The platform will connect teachers & school, students, parents, local government etc. The learning city (cidade 2.0) will be launched in May 2010.

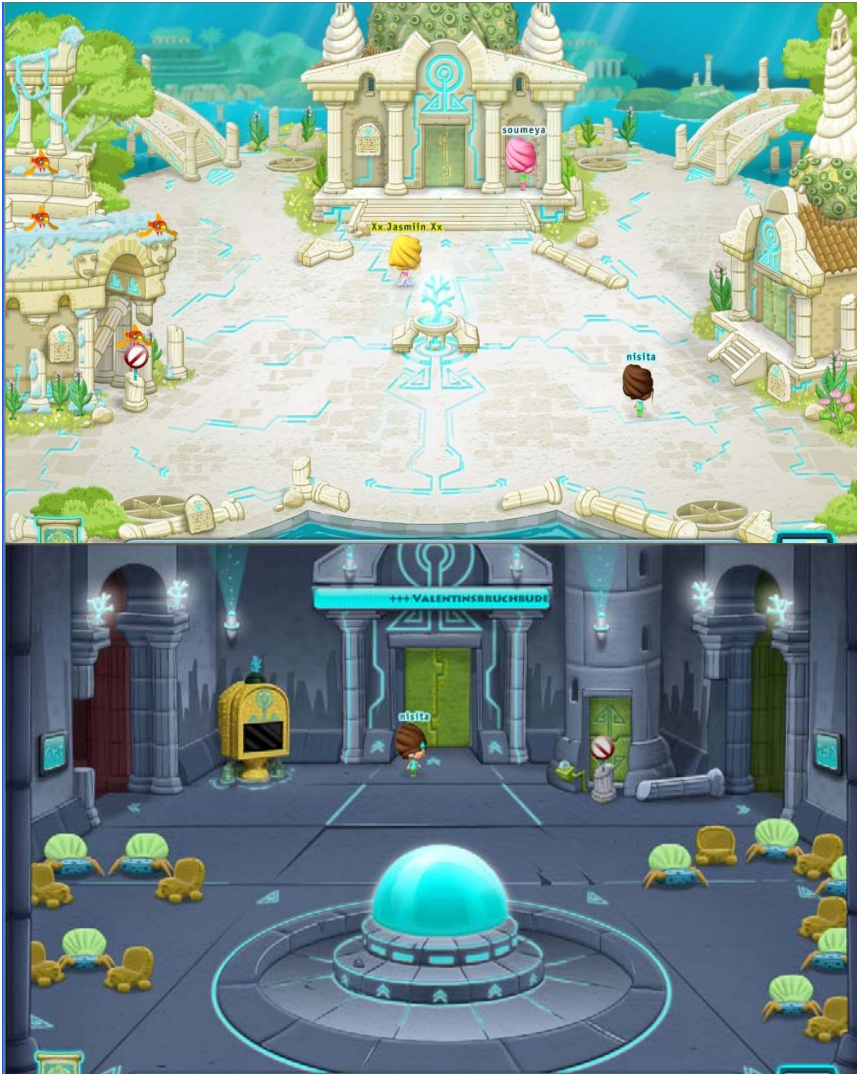


Figure 24 Cidade 2.0 the users have a virtual identity.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/783.pptx>
- Tice.pt presented (available in English): <http://www.tice.pt/apresentacao/apresentacao.aspx>

### 5.10 IKT Senteret, the new national centre in Norway

Elisabeth Bækken and Sindre Wolf, IKT Senteret, represented the new national ICT centre in Norway. The centre was established January 2010. The target groups are kindergarten, primary, secondary, upper secondary, and teacher training. The main goal for the centre is “better use of ICT” to improve educational quality, enhance learning and to provide better educational learning strategies. IKT Senteret has offices in Oslo and Tromsø.

The centre was formed by bringing together Utdanning.no, Uninett abc and ITU. The three organisations brought their respective portfolios with them and will continue to solve many of these as well as new assignments.

**Utdanning.no – the services:** the main activity is the portal utdanning.no. It contains a repository with digital learning resources (5500 resources), an overview of the educational possibilities in Norway, Career-descriptions etc. In 2010 one of the focus areas is new career and educational services to increase the number of students that complete their study.

A new initiative is a repository with learning resources for the Sami people. The Sami people are a minority in Norway with their own language and culture. As the total number of teachers is only 400 it is actually possible to talk to all of them in the development process.



Figure 25 Utdanning.no.

**Uninett ABC – the infrastructure:** the focus is on ICT architecture/infrastructure (getting computers and broadband to the school), standards and interoperability, privacy and data protection. Uninett ABC is behind FEIDE – a single-login system for education in Norway. The use of FEIDE has been optional so far and the use has not been widespread. Initiatives are started in 2010 to get more users.

**ITU – the research:** a research and competence centre for ICT and education. Its main functions are dissemination and research from the user perspective. Two initiatives:

- ITU Monitor was started in 2003 and conducted every second year. The objective of ITU Monitor is to survey the use of ICT in Norwegian schools by teachers and students (will be national in the future so that all teachers and students are tested). The 2009 report can be found here (in English): <http://www.itu.no/ITU+Monitor.9UFRDSXH.ips>
- ITU Mentor: It is inspired by BECTAs self-review framework.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/784.pptx>
- ITU: [http://www.itu.no/no/Om\\_ITU/English/](http://www.itu.no/no/Om_ITU/English/)

### 5.11 Update from The Netherlands

Wim de Boer, SLO and Henk Nijstad, Kennisnet gave an update from The Netherlands on three topics.

#### *Commercial educational publishers*

In Holland there are 50+ repositories, with the harvester etc. The content chain model was introduced a few years ago (presented at earlier EdReNe seminars). The commercial publishers were involved but they did not act, they were only observing.

At the moment the publishers are taking steps to enter the chain with their content. They are willing to bring their learning objects into a context with the open content. The drivers are:

- The business opportunities (new business), in a digital world you can sell by unit to everyone (parents, teachers, etc.).
- Pressure from the open content, the wikiwijs movement (see Section 4.4.1) has a large budget and many organisations working together.
- Shrinking sales can be a driver as that is a reality in Holland today.
- School management (secondary schools) express the need for this type of content.

Kennisnet is collaborating with 5 big publishers. The publishers will have their own repository connected with EduRep.

The publishers must consider which content they wish to expose (granularity: large vs. small learning objects, methods vs. LOs). They must consider how the user should find the content, the metadata in field 9 must be precise, and the right vocabulary must be used.

The publishers have argued for the introduction of identity-based search facility. The wish is to show a “teasing-page” when the user does not have the rights (haven’t bought the product) and if he has the rights he should go directly to the content (technical issues must be solved here).

Furthermore, the publishers regard the repository as a distribution channel so they expect to have all the statistics you would have in a standard web shop (leads, clicks, orders etc.).

The last discussion theme is the business case. The publishers must invest in this new distribution channel, how can they make money from it?

All publishers should be connected before summer (according to the plan). The Kennisnet/EduRep service is for free. However, the publishers must invest time and work in the project. It is part of the project to evaluate how much time is needed.

#### *Learning paths*

Teachers do need learning paths, not single learning objects (the curriculum has certain goals; the learning path is the path you follow towards these goals). In The Netherlands there are lots of books packaged with IT. Obviously, the books have a specific path to follow.

The printed books are a big market, but it is changing with the introduction of the digital resources. Schools work with a certain learning material for a number of years before they choose/buy new material. In general this is 10 years in the primary schools and 5 years in secondary.

The open content provides new possibilities and flexibility. However, it is difficult for the teachers to connect the open content to the curriculum. The content must be related to a “learning path”. This would help many teachers. It is only a small number of schools which stop buying books and teach entirely with open content.

The solution might be to describe the curriculum as a sort of classification/list in a way that support the use of it both with books (e.g. each chapter could include description of the relevant curriculum areas) and open content. The learning path should give the teacher the possibility to replace parts of the book with learning resources along the learning path.

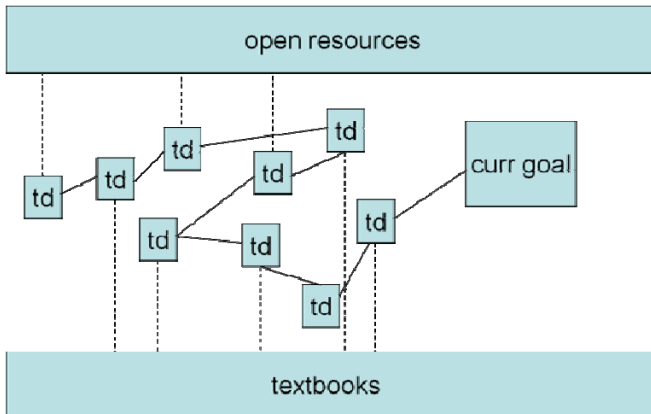


Figure 26 Learning path.

*Results from a new teacher survey on learning resources*

More than 1200 teachers from primary and secondary answered the questionnaire in November and December 2009. The survey is done every year. Learning resources includes digital as well as paper based resources.

Some of the results are included in the following.

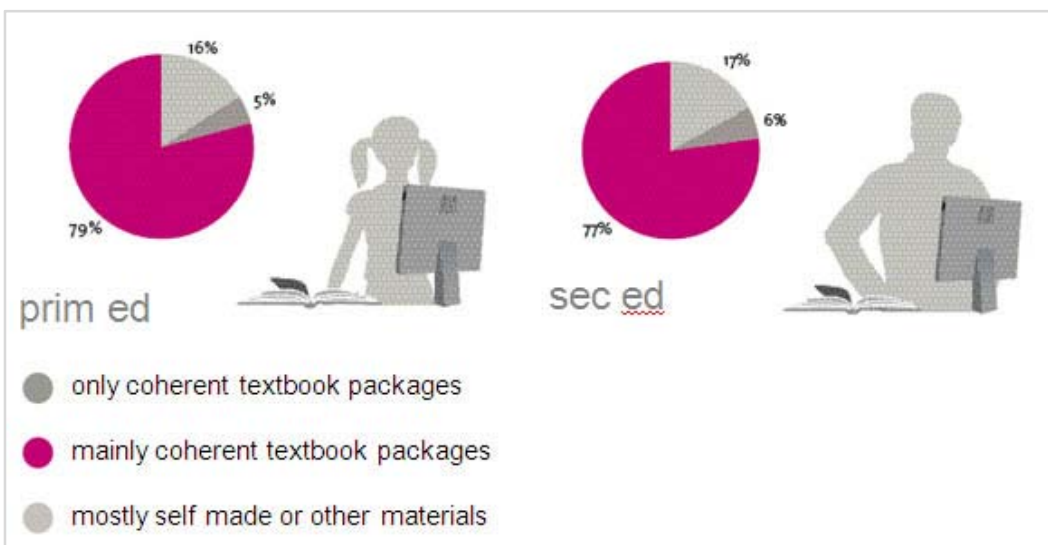


Figure 27 Books are still prominent.

Other interesting results:

- 90% of the teachers develop (sometimes) resources to differentiate or to make extra content/activities. 50 % develop resources together with close colleagues. Less than 10% with colleagues from other schools.
- 90% shares most of their resources; almost exclusively with **near** colleagues. In secondary education digital opportunities to share (intranet, mail etc) is increasingly used. In primary education “paper sharing” plays a greater role. A remarkably small part (2% prim. edu, sec. edu 5%) shares their resources through dedicated sites/services/repositories.

The questionnaire included questions about what kind of information the teachers need when they search for open educational resources (besides type of education, level, subject area and topic). The following table shows what the teachers found most valuable. Kennisnet and SLO are going use this knowledge in the user interface design and they will find out how it should influence the applied LOM metadata.

In form	prim edu	sec edu
Goal	94%	89%
Form (pdf / ppt / paper / animation / etc)	92%	88%
Experiences in the classroom	84%	80%
Use with / without a PC	81%	77%
Number of hours	63%	73%
Mentioning source	26%	41%
<b>Content</b>		
Differentiation possibilities	96%	79%
Variation in pedagogical approaches	94%	84%
Fits in a curriculum of a year for a course	91%	78%
(partial) replaces textbook	85%	82%
Relates to general curriculum goals	78%	67%

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/785.ppt>
- The statistics (in Dutch): <http://www.slo.nl/downloads/2010/Leermiddelenmonitor-09-10.pdf/download>

### 5.12 Model and method for evaluation of eQNet travel well quality learning resources

Eugenijus Kurilova, ITC, presented the eQNet project and his work on “travel well” quality criteria and evaluation methods. As this was a very comprehensive presentation, the reader is referred to the presentation for further details. The following is a short introduction to the subjects.

### *The eQNet project*

European teachers are increasingly using digital learning resources as part of their teaching activities. Digital learning resources are made available to teachers through educational portals and digital libraries in many European countries. But can teachers use learning resources that originate from a country different than themselves? Or learning resources that are in different languages than that of the teacher or learners?

eQNet is a three-year (September 2009-2012) Comenius Multilateral Network funded under the European Commission's Lifelong Learning programme. The project is coordinated by European Schoolnet and involves 9 Ministries of Education - AT, BE, CZ, IT, LT, NO, PT, SK, SE or agencies nominated to act on their behalf.

The primary aim is to improve the quality of LOs in LRE. eQNet will do this by establishing a network consisting of policy makers, researchers, and practitioners (teachers) that will develop and apply "travel well" quality criteria to both existing LRE content as well as that to be selected in future from national repositories. Further information can be found in the presentation.

### *Travel well quality criteria*

The aim of the presentation was to suggest a scientific model and methods for expert evaluation of the quality of LOs paying special attention to LOs reusability level (or their ability to "travel well" between different contexts and education systems). According to Eugenijus Kurilova, the main problem of all existing approaches in the area is a high level of expert evaluation subjectivity.

Reusability of LOs covers at least the following:

- Interoperability: LO is interoperable and can be used in different platforms.
- Flexibility in terms of pedagogic situations: LO can fit into a variety of pedagogic situations.
- Modifiability to suit a particular teacher's or student's needs: LO can be made more appropriate to a pedagogic situation by modifying it to suit a particular teacher's or student's needs (McCormick *et al.*, 2004).

Eugenijus Kurilova has studied quality criteria from many different projects, contexts and countries among others: Leacock & Nesbit, Becta, and the Melt project. They are all summarised in the presentation.

The main problem here is how to establish the 'proper' set of LOs evaluation criteria which should reflect objective scientific principles of construction a model (criteria tree) for LOs quality evaluation. The analyses lead Eugenijus Kurilova to the model shown below.

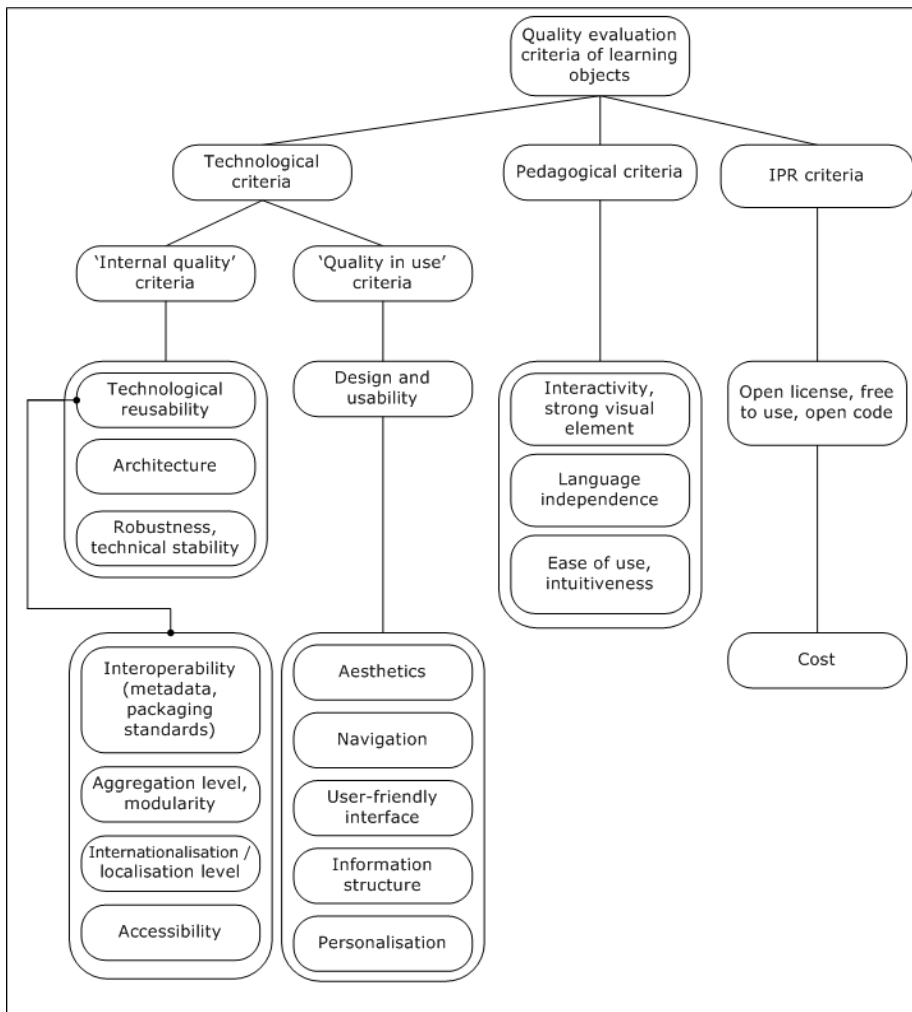


Figure 28 The criteria tree proposed by Eugenijus Kurilova.

With the use of this criteria tree, a scalarization method and a conversion table for evaluators' assessment measures in natural language (e.g. "Excellent" equals 0.850 .. Bad equals 0.150) this model can be used to obtain a final score, which can be compared across different Learning Objects. Further explanation and three examples are provided in the presentation.

Further information:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/786.ppt>
- The eQNet website: <http://www.eqnet.eun.org/web/guest>

## 6 An introduction of new members

EdReNe invites all stakeholders interested in sharing experiences and opinions on repositories of learning resources to join the network as members, read more at <http://edrene.org/join/index.html>.

This chapter gives a short introduction to the three new members and their work within the field:

- KlasCement – a user generated repository.
- OLnet /Open University – research on the design, use, reuse and redesign of Open Educational Resources (OER).
- ATIT – and news on two European Video Repositories.

### 6.1 KlasCement – examples from a user generated repository

Hans De Four from KlasCement presented the Flemish educational portal and the organization behind.

#### Facts & Figures KlasCement

- Flanders: 150000 teachers
- Educational portal, user generated content, established 1998, support from MoE since 2002.
- Members: 61500 (BE: 53000 - NL: 7500 - Rest: 1000)
- Learning objects: 17000 (+25/schoolday, +5000/year)
- 4000 in SCORM format, 6000 docs, and 1800 multimedia (further info in the presentation).



Hans De Four used the four EdReNe themes as a structure for the presentation.

#### Standards and interoperability

First of all, metadata should make it easier to find quality content. The metadata must be useful either for the end-user or the repository.

The content in KlasCement can be filtered by different metadata fields, e.g. type (calendar, LO, multimedia, etc), category (excursion, computer activity, class activity, etc), subject, etc.

7% of the 61.500 registered teachers (they must register to use content) are sharing, that is 4500 users are sharing. Hans De Four stressed that it must be really simple to share the learning resources that is to fill in the requested metadata. In KlasCement there is a fast way (one page to fill in, only mandatory fields) or an extended way (5 steps). Few of the metadata fields are filled-in automatically.

Standards are important when interfacing with the “outside world”. At the moment content from KlasCement are present in the Dutch repository EduRep and the LRE (by EUN). Soon the content from these two repositories will be shown in KlasCement. Similarly, content from KlasCement is included in different VLEs.

KlasCement contains 4000 SCORM objects (online exercises for language learning). It should be added that these learning resources have been developed by the government. SCORM is too difficult for teachers and the incentive is lacking.

### *Repository strategies*

Quality control is an important issue. At KlasCement quality control is provided in two ways:

1. The five teachers working at KlasCement moderate the content. They take a look at the metadata (and edit them if necessary), the content in general (spelling, trustworthy, relevance, immediately useful, not too commercial etc.), and they check for copyright violation. They do not judge on pedagogy.
2. End-user quality assurance: Reviews, ratings, add to favourites, and sharing with others.

### *Engage users*

“KlasCement is YOUR site” is the overall philosophy for the portal. This approach is behind the many personalised functions at the portal, e.g. the users have a profile, they can communicate via their personal mailbox, save their favourites, receive personal newsletters, invite colleagues and friends etc.

The credit system at KlasCement is quite unique and one of the methods to engage users and stimulate sharing.

Start: 1000 points

View contribution: - 2 points

Add contribution: + 40 to + 100 points

Comment, rate...: + 5 to + 20 points

International Day of the Teacher: + 50 points

Birthday: + 50 points

Promoting KC or helping or team: + ... points

In the future they might decide to exchange point to euro to enable teachers to buy things via KC (e.g. 250 points = 1 euro).

Other incentives include small prizes, free web space for resources, free weblogs, ICT-days, etc.

#### **7 tips to engage users**

1. *Work with and invest in teachers (bottom-up)*
2. *Provide quality of content AND users!*
3. *Show your users*
4. *Communicate fast*
5. *Be helpful and enthusiastic*
6. *Send interesting newsletters*
7. *Keep it / IT simple!*

### *Rights issues*

KlasCement has the following recommendations for other repositories:

- Present clear and easy to understand information on usage rights.
- When sharing: ask questions about source and usage.
- Use your experts to review before approval (moderation) and let your users review after approval.
- Creative commons (where possible and useful).
- Meet educational publishers.
- Put rights issues on the political agenda.
- Think about open access! And access control. KlasCement has been asked to restrict the use of the portal further that is no parents, students etc. However, they do not think that is a useful solution.



Figure 29 Hans De Four gives recommendations for other repositories.

Further information can be found here:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/769.pptx> including input from user research on KlasCement.
- The portal in English: [http://www.klascement.net/?set\\_language=4](http://www.klascement.net/?set_language=4)

## **6.2 OLnet /Open University - Engaging users and producers whilst gathering evidence of design, use, reuse and redesign of Open Educational Resources**

Tina Wilson from Open University, UK, presented OLnet and OpenLearn for the EdReNe members. It may be added that the Open University (OU) is a distance-learning institution. The majority of the students are based in the UK.

*OLNet – To search out the evidence for use and reuse of open educational resources*

OLnet (open learning network) is a 3 year initiative backed by The William and Flora Hewlett Foundation. It is a partnership between the OU and Carnegie Mellon University building on the experience that they have gained in developing and researching Open Educational Resources (OER). Generally speaking, there are plenty of OER repositories available, but there is not much evidence of reuse of OER.

The Hewlett foundation has invested more than \$90m in establishing OER. They want to find out more about the benefits – what is the evidence? How should people learn with them? What issues does the community still need to solve?

OLnet will develop a networked community of researchers and practitioners – offering them support, events and a chance to contribute evidence and questions. OER acts as a unifying theme that will generate sub-issues that need to be considered. Projects will carry out different streams of research looking at such things as design, collaborative learning and the developing world.



Funded fellowships will bring in external expertise and offer a programme of exchanges and support for research ideas.

Within OLnet Tina Wilson is particularly involved in the strand: “The professional educator role”. What is the role of educators and learners in the process of OER creation? And how are OER being reused for teaching and learning (HE, FE and schools)? Which barriers have an impact on reuse (technical, support and/or design)? Which role does a

communication tool play and what about the “sense of community”?

These different perspectives will be addressed in projects within the research area.

### OpenLearn - OER in practice

OpenLearn allows students to study online with the Open University for free. OpenLearn offers a full range of Open University subject areas from access to postgraduate level. In total the repository contains more than 13.500 study hours (a unit is between 3-50 study hours in length).

The Open University has been a pioneer in making learning materials freely available. Open content equalizes access to high quality education and supports the social justice agenda.

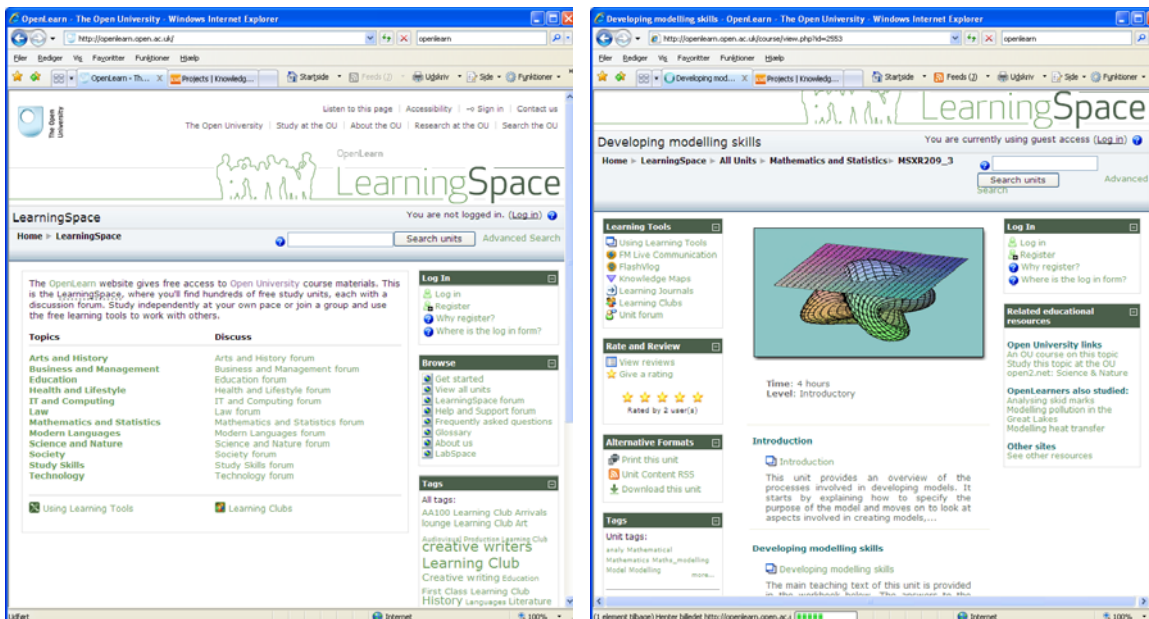


Figure 30 The LearningSpace website gives free access to Open University course materials – hundreds of free study units, each with a discussion forum.

OpenLearn has two websites: LearningSpace (Open University content only) for learning and LabSpace for reuse and remix the resources (Open University content and others).

Further information can be found here:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/770.ppt>
- OLnet: <http://olnet.org/>
- OpenLearn: <http://www.open.ac.uk/openlearn/home.php>
- OpenLearn LearningSpace: <http://openlearn.open.ac.uk/>
- OpenLearn LabSpace: <http://labspace.open.ac.uk/>

### 6.3 ATiT and two new European projects on video repositories

Sally Reynolds and Mathy Vanbuel, ATiT, introduced the company and some of the projects ATiT is taking part in.

ATiT was founded in January 1999. The company specialises in the educational, cultural and training sectors and provides audio-visual production, project management, training, and consultancy services to clients all over the world. The company has a large and skilled network of associates, and offices in Belgium and Ireland.

#### *EduTubePlus*

The EduTubePlus project (September 2008-February 2011) is co-funded by the Community programme eContentplus.

The purpose of EduTubePlus is to establish a European curriculum related video repository and to set up services for the exploitation of video in class (i.e. compulsory education). This includes both professionally produced video (FR5, RAI, MoE TV Greece, etc.) as well as user-generated video (KlasCement among others).

A multi-lingual repository with 5.400 curriculum-related video clips is being created by selecting from existing educational resources provided by the project partners, core-concept video-clips suitable for in-class use, according to a well-defined video selection strategy.

The EduTubePlus service will enable users to develop and share video-based learning scenarios and lessons, to search resources using terms related to their national curriculum and to use video in a pedagogically relevant manner in-class.

It is important for the project to ensure that the content in the repository is used in the classroom.

ATiT will play a role specifically in the piloting of the service and in the support and delivery of various training related activities in relation to user-generated video. The Pilot implementation for evaluation (Menon) involves 50+ European Schools.

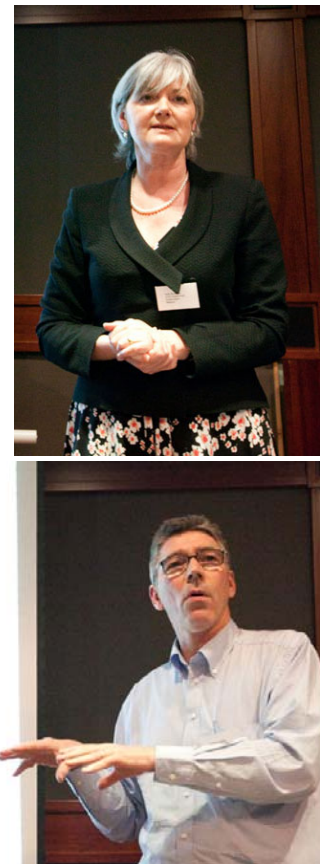


Figure 31 Sally Reynolds and Mathy Vanbuel from ATiT.



Figure 32 The EduTubePlus website.

### *EUScreen - 35.000 items online by the end of the project*

The EUScreen project is co-funded by the European Commission within the eContentplus programme (project start: October 2009).

This video repository project is tapping into the archives of the EU public broadcasters like DR in Denmark, Deutsche Welle, RAI in Italy, VRT in Belgium, Television de Catalunya, RTE in Ireland, ORF in Austria, INA in France and many others.

EUScreen aims at providing access to Europe's television heritage through an online portal with videos, photos and contextual information.

EUScreen should be the public broadcasters' connection to Europeana.

The target users are entertainment, creative reuse, research, and education. The repository contains 10.000 items at the moment, the goal is 35.000 items. A pilot project called VideoScreen reached about 3000 items from 9 public broadcasters.

ATiT is a partner in EUScreen and will be responsible for exploiting use of these materials in the educational sector.

#### **Facts & Figures EUScreen**

- A Best Practice Network funded by the European Commission.
- A consortium of 27 partners from 19 European countries.
- Co-ordinated by the University of Utrecht.
- A three-year project which started in October 2009.
- Content aggregator for Europeana.
- 35,000 items like videos, articles and photographs online by the end of the project.



Figure 33 On 15 January 2010 EUScreen launched its website ([www.euscreen.eu](http://www.euscreen.eu)) where all public documentation produced within the EUScreen project will be made accessible, along with links to specific sites and documentation about EUScreen technological issue.

Further information can be found here:

- The presentation: <http://files.itslearning.com/data/826/open/CO15/771.ppt>
- ATiT's website [www.atit.be](http://www.atit.be)
- EUScreen: <http://www.euscreen.eu/>
- EduTubePlus: <http://www.edutubeplus.info/project/edutubeplus>

## Appendix 1: Agenda

The 4th strategic seminar took place at the Hotel H1898 in Barcelona from 24<sup>th</sup>-26<sup>th</sup> March, 2010.

Based on valuable suggestions from the EdReNe members, the agenda for this strategic seminar included both presentations from invited experts and members. The main focus for the seminar was to address the current status and need for updated recommendations on the four themes of EdReNe.

Wednesday 24 <sup>th</sup> March 2010		
15.00	Arrival	
16.00	Welcome and opening Introduction	Representative from UPF, Barcelona Leo Højsholt-Poulsen, UNI•C
16.30	<i>Opening lectures – experiences of Catalonia</i> Learning Object Repositories  The situation of open access institutional repositories in Spain	Julià Minguillón, Universitat Oberta de Catalunya, Barcelona  Ernest Abadal, Department of Library and Information Science, University of Barcelona
18.00	First day finishes	

Thursday 25 <sup>th</sup> March 2010		
9.00	EdReNe – election of new board	Members
9.15	<i>Special theme</i> Content Ecosystem procurement – an update Persistent Identity and Resolution project  <i>The four themes of EdReNe – status and recommendations</i>  <i>Standards and interoperability</i> <i>Rights issues</i> <i>Repository strategies</i> <i>Engaging users and producers</i>	Andrew Kitchen, Becta          <i>Each theme will be introduced by invited experts. Based on these introductions and the published thematic synthesis report on the theme, group sessions will sketch EdReNe recommendations in this area.</i>
	<i>Standards and interoperability</i>  The ASPECT project's initial results on the implementation of standards	Àgueda Gras-Velázquez, EUN

	Group discussions	Participants	
	<p><i>Rights issues</i></p> <p>The impact of Creative Commons</p> <p>New possibilities and threats for authors in a digital world</p> <p>Group discussions</p>	<p>Ignasi Labastida, Creative Commons</p> <p>Thomas Meloni Rønn, BFU</p> <p>Participants</p>	
13.00	Lunch		
14.00	<p><i>New members</i></p> <p>KlasCement</p> <p>OLnet /Open University</p> <p>ATiT</p>	<p>Hans De Four, KlasCement</p> <p>Tina Wilson, OU/OLnet</p> <p>Sally Reynolds/Mathy Vanbuel, ATiT</p>	
15.00	Coffee break		
15.30	<p><i>Repository strategies</i></p> <p>On-line resources and repositories, the strategies of Andalucía</p> <p>Group discussions</p>	<p>Juan Rafael Fernández, Andalusian Educational Authorities</p> <p>Participants</p>	EdReNe management board meeting
	<p><i>Engaging users and producers</i></p> <p>Which digital resources do users want and how may repositories help them find the best</p> <p>Building the MoLeNET community and sharing mobile learning resources</p> <p>Group discussions</p>	<p>Linda le Grand, VO-raad, Netherlands (<i>Board of Secondary Schools</i>)</p> <p>Jill Attewell, Learning and Skills Network</p> <p>Participants</p>	
18.00	Second day finishes		
19.30	<p>Walking tour in Barcelona Gothic quarter</p> <p><a href="http://www.bcn.es/turisme/english/turisme/llocs/13_0.htm">www.bcn.es/turisme/english/turisme/llocs/13_0.htm</a></p>	Participants	
21.00	<p>Seminar Dinner at La Mar Salada Restaurant</p> <p><a href="http://www.lamarsalada.cat/portada-mostra-0-eng.htm">www.lamarsalada.cat/portada-mostra-0-eng.htm</a></p>	Participants	

Friday 26 <sup>th</sup> march 2010		
09.00	Final reports	Leo Højsholt-Poulsen, UNI•C
9.30	<i>News from members</i> Update from Intrallect - recent work Latest news from Share.TEC Inspire - aiming at promoting the use of digital learning resources in MST education Scientix - The Community for Science Education in Europe	<i>EdReNe members</i> Charles Duncan, Intrallect and Neil Livesey Learning and Teaching Scotland Fred de Vries, Share.TEC Agueda Gras-Velazquez, EUN Agueda Gras-Velazquez, EUN
10.30	Coffee break	
	Update from Skolverket – including a presentation of “Dela!” – an online teacher community Update from the Portuguese School Portal Junior Virtual Assembly, a new Portuguese project IKT Senteret, the new national centre in Norway Update from SLO and Kennisnet Model and method for evaluation of eQNet travel well quality learning resources	Christina Szekely, Skolverket, Niklas Karlsson, Dela! José Moura Carvalho, DGIDC Rui Falcao, EduWeb Elisabeth Bækken, IKT Senteret Wim de Boer, SLO and Henk Nijstad, Kennisnet Eugenijus Kurilova, ITC
12.30	Project Evaluation	EdReNe members
13.00	Lunch	Participants
14.00	Seminar finishes	

## Appendix 2: List of participants

20 of 22 founding members were represented. In addition 12 associated members participated. Together with the invited guest speakers and external experts a total of 83 persons attended this strategic seminar.

The following list is sorted by “Organisation”.

Navn	Organisation	Country
Maria Loi	AIE	Italy
Juan Rafael Fernández	Andalusian Educational Authorities	Spain
Sally Reynolds	ATiT Audiovisual Technologies	Belgium
Mathy Vanbuel	ATiT Audiovisual Technologies	Belgium
Alex Kidd	Becta	UK
Andrew Kitchen	Becta	UK
Jens Viggo Moesmand	BFU	Denmark
Reinhold Hawle	BMUKK	Austria
Linda le Grand	Board of Secondary Schools	Netherlands
Ron Zuylen	Board of Secondary Schools	Netherlands
Sandra Reoyo	CBUC	Spain
Rosa Maria Gómez de Regil	CNDP	France
Aude Laurent	CNDP	France
M. Henri Kighelman	CNDP	France
Lars Juul Jensen	ConDidact	Denmark
Ignasi Labastida	Creative Commons	Spain
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