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**EdReNe**

**Expert workshop 2 on standards and interoperability:  
program, list of participants and proceedings**

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***eContentplus***

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<sup>1</sup> OJ L 79, 24.3.2005, p. 1.

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## Introduction

The workshop took place at Congresshotel Oud-Poelgeest, february 25th – 27th 2009, Oegstgeest in the Netherlands.

The first EdReNe workshop on standards and interoperability<sup>1</sup> focused on

- Metadata standards:
  - LOM profiles
  - Automatic metadata generation
  - Strategies for vocabularies and curriculum mapping
- Standardized content
- LMS/VLE – repository integration.

Suggestions to the upcoming workshop were:

- Authentication / Identity management
- Statistics on repository use (dealt with in workshops on engagement of users)

At the strategic seminar in Lisbon the following issues were also given high priority:

- Mapping the landscape of standards (identifying current use; which standards help provide which functional requirements of educators/learners; best practise examples).
- A workshop on A&A, to share knowledge and best practices on the topic.
- Successful/less successful use of OpenID and other SSO standards.

The present workshop attempts to focus on the above issues but mainly as seen from different user perspectives in combination with the educational content value chain which could simply be expressed as: create → share → search → arrange → use

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<sup>1</sup> For further information on the workshop 4.1 in London please see: <http://edrene.org/workshops/standards/ws4-1.html>

## Conclusions

From the presentations and discussions during the workshop, it is clear that there are still a number of barriers to overcome when it comes to dealing with standards and interoperability in relation to educational repositories.

It seems evident that irrespective of the user perspective taken current educational standards often do not meet primary user needs. The reasons for this are very diverse depending on whether you want to find, use, produce or reuse digital content, but it underlines the importance of designing for humans first, machines second and reuse building blocks from widely adopted standards instead of developing new. The sheer number of existing standards and differences in their implementation by different providers of tools and content currently seems to have almost made it necessary in some cases to focus on the interoperability between the standards and specifications themselves instead of focusing on the original problem.

Nevertheless there was also (still) consensus on a growing need for ensuring interoperability. One of the important keys to this will undoubtedly be efficient authentication and authorization systems. Various national approaches were presented and discussed during the workshop. An interesting outcome of this discussion was that the success of such initiatives is often much more dependent on political decisions (such as mandatory use of specific solutions etc.) than the actual technical implementation.

During the workshop a number of user stories seen from the perspective of different types of stakeholders were collected in order to identify what is considered the most important user needs. These stories will be matched and correlated with existing standardization and interoperability initiatives in the forthcoming thematic synthesis report.

## Agenda

Wednesday February 25 <sup>th</sup> 2009		
14.00	Arrival and Welcome	Tommy Byskov Lund, UNI-C
14.30	<p><b><i>Standards and interoperability – impact and importance for the educational value chain.</i></b> (Organised by Kennisnet) To have the perspective from different players on how standards influence their role - and their expectations towards standards - the workshop will begin with brief presentations from:</p> <ul style="list-style-type: none"> <li>• Teacher as a user of digital content</li> <li>• VLE/LMS provider</li> <li>• Services provider</li> <li>• Educational Repository owner (Take Shape Share)</li> <li>• Teacher as an author</li> </ul> <p>The key issues from each presentation will serve as the basis for subsequent discussion/mindmapping sessions.</p>	<p>Ger Thielemans, Lyceum Enschede in Stedelijk</p> <p>Bart van Kimmenade, Teletop, <a href="http://www.teletop.nl">www.teletop.nl</a></p> <p>Henk Nijstad, Kennisnet, <a href="http://edurep.kennisnet.nl">edurep.kennisnet.nl</a></p> <p>Albert de Vos, FENC, <a href="http://www.tsseurope.eu">www.tsseurope.eu</a></p> <p>Ger Thielemans, Lyceum Enschede in Stedelijk <a href="http://www.deonderwijsvernieuwingscooperatie.nl/">www.deonderwijsvernieuwingscooperatie.nl/</a></p>
17.30	First day finishes	
19.00	Dinner at Congreshotel Oud-Poelgeest	

Thursday February 26 <sup>th</sup> 2009		
09.00	Group session 1: User stories relating to the content value chain	
10.30	Coffe break	
11.00	Group session 1 continued	
11.45	<p>ASPECT - a presentation of the new best practise network with experts from all international standardisation bodies and consortia active in e-learning (CEN/ISSS, IEEE, ISO, IMS, ADL) working together to improve the adoption of learning technology standards and specifications. See <a href="http://aspect.eun.org">http://aspect.eun.org</a></p>	Frans van Assche, EUN
12.30	Lunch	
13.30	<p>Presentation of new members:</p> <ul style="list-style-type: none"> <li>• <a href="http://teachable.net">teachable.net</a></li> </ul>	Edward Upton
14.00	Authorization and Authentication strategies.	

<b>Thursday February 26<sup>th</sup> 2009</b>		
	Examples presented by members:	
	<ul style="list-style-type: none"> <li>UNI-login – a national educational single sign on solution</li> </ul>	Michael Viskum, UNI•C
	<ul style="list-style-type: none"> <li>FEIDE - an identity management system on a national level for the educational sector in Norway</li> </ul>	Trond Hanssen, utdanning.no
	<ul style="list-style-type: none"> <li>Entree - one account for all educational websites</li> </ul>	Pieter Bruring, Kennisnet
16.00	Coffee break	
16.15	Group session 2: Thematic synthesis report on Standards and Interoperability	
17.00	Second day finishes	
18.00	EdReNe workshop dinner at a restaurant in Leiden	

<b>Friday February 27<sup>th</sup> 2009</b>		
09.00	Administrative issues and project update	Tommy Byskov Lund, UNI•C
09.15	Common File Format for Interactive Whiteboard Content - an update	Will Ellis, Becta
09.45	Group session 2 – continued : Thematic synthesis report on Standards and Interoperability	
10.30	Coffe break	
11.00	Group session 2 – continued : Thematic synthesis report on Standards and Interoperability	
11.45	Models for adoption of standards (discussion)	
12.15	Looking and planning ahead - Workshop evaluation	Tommy Byskov Lund, UNI•C
12.30	Lunch – workshop finishes after lunch	

## Session summaries

### ***Welcome and reporting from expert workshop 4.1***

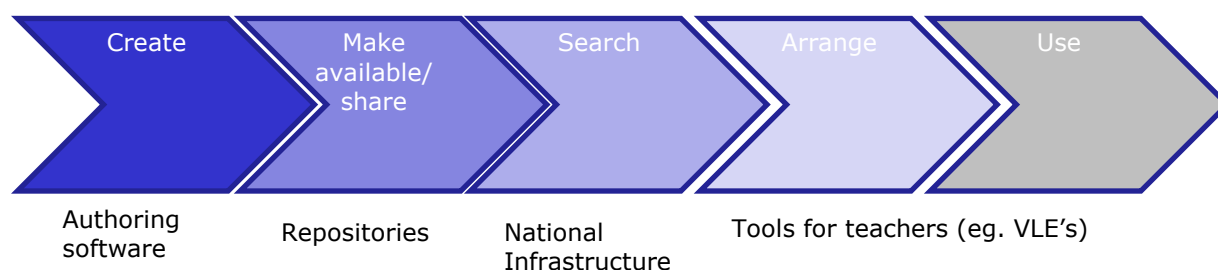
Tommy Byskov Lund opened the workshop by welcoming all participants, especially new members and representatives that had not attended previous EdReNe events. The workshop agenda was outlined in the light of input from both the strategic seminar in Lisbon and the first expert workshop on standards and interoperability.

### ***Standards and interoperability – impact and importance for the educational value chain***

Jan Kees from Kennisnet gave a brief introduction to the afternoon session. The main objective of the first presentations of the workshop was to foster input for the subsequent group discussions. This was intended by:

- presenting different perspectives (roles / user types) on the usefulness of learning technology standards
- showing an integrated value chain from the user to the author with multiple parties involved

The presentations in other words represented different stages of the of the “*educational content value chain*” which could be described as:



Interoperability between the elements of the value chain should ideally be supported by *standardization*.

Jan Kees then gave a brief overview of the Dutch situation. There are 4-5 major players in the field. They facilitate the connection of 18 repositories by offering 8 different interfaces including a mobile interface.

Among the standards that are currently in use are: OIA-PHM for harvesting, IEEE-LOM for metadata, SCORM for packaging and SRU/SRW for searching.

Finally Jan Kees outlined how the following sessions would give the perspective on how standards influence the role and expectations from the following players:

### ***Teacher as a user of digital content***

Ger Thielemans from Lyceum Enschede in Stedelijk told about his experiences with the use of ict and digital content in upper secondary education over his career as a teacher.

The presentation included examples from the early days of computer assisted instruction to today where the school has a learning portal (VLE) where they put learning resources, organize activities, facilitate collaboration between the students and monitor their use.

The importance of being able to adapt and remix content was emphasized – but also presented as a bit of a paradox as many teachers seem to be perfectly happy to use the material without adapting it. On the same note many of the most popular content resources are not standardized content packages but rather “just” embedded web pages etc.

Another important observation was that the most important part of a VLE are the persons using it – it certainly still takes a good teacher to foster good learning.

In the subsequent discussion different content packaging specifications were discussed. One argument was that the mere fact that several different specifications and standards exist is an important part of why they are not meeting the needs of neither teachers nor producers.

Relevant links:

- Lyceum Enschede in Stedelijk, VLE (in Dutch): <http://studiewijzerplus.nl/>

### ***Benefits of standards and interoperability – from a VLE provider perspective***

Bart van Kimmenade from the Dutch VLE provider TeleTOP presented how they work with their customers on facilitating e-learning through their VLE. The customers span from higher education to secondary and vocational education.

TeleTOP has put emphasis on integration with other systems – and that was considered one of the main drivers for their adoption of standards. Standards have been adopted from a commercial point of view (necessary marketing argument) but also to improve the users’ value of the VLE and the included content.

As an example they also conform to non-content standards such as IMS Enterprise Services, IMS Tools Interoperability and IMS ePortfolio. One of the most challenging issues concerning standards right now – from the point of view of a VLE provider – is the necessity of dealing with multiple solutions to provide single sign on to customers.

Bart gave a brief online introduction to TeleTOPs VLE and showed how content created within TeleTOP can be included in a collection, which is a part of the central EduRep network.

Some of the key lessons learned by TeleTOP in their work with facilitating the use of standardized digital content in schools include:

- Schools don’t buy SCORM packages - they buy books or flat html websites
- Publishers have to improve their SCORM material if they should be useful in VLEs. Different implementations of SCORM - both at the publishing and receiving end - still often cause problems
- Metadata requirements for sharing teacher produced material are often too complex and as a consequence in most cases incomplete
- Teachers don’t share their own material across institutional borders

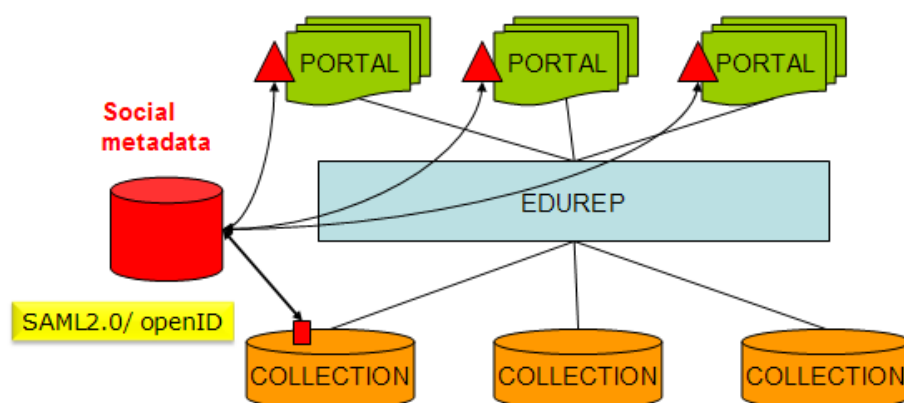
Relevant links:

- [Download presentation](#)
- [www.teletop.nl](http://www.teletop.nl)

### **Connection services for the Content (Value) Chain**

Henk Nijstad from Kennisnet discussed how they as a national agency could help and facilitate the use of digital content in schools by providing the “connecting middle layer” of the Dutch content value chain. One of the prominent examples of this is the central metadata harvester EduRep, which at one end integrates (harvests metadata from) a number of collections and then allows (specific subsets of) the metadata to be searched from a number of different sites (VLEs, portals etc.).

- Currently holds metadata of around 180.000 learning objects
- 1-2 collections are produced by teachers
- Most objects are from museums
- New initiative is a social metadata framework module which provides all portals of the network with social metadata possibilities (inclusion of social metadata from other connected sites).
- To be part of EDUREP you have to conform to the national LOM profile
- It is an open model in the sense that if you add value to the chain you can join



A major goal of Kennisnet is to implement and facilitate a market model. One of the reasons for this is that commercial publishers currently use alternative distribution channels.

Relevant links:

- [Download presentation](#)
- [edurep.kennisnet.nl](http://edurep.kennisnet.nl)
- Sample interfaces for searching:
  - Demo: <http://edurepdemo.kennisnet.nl/edurepdemo/>
  - Mobile: <http://m.edurep.nl/search/>

### **Educational Repository owner**

Frans Kamp from ROC Westerschelde and Albert de Vos from ROC Zeeland presented the TSS (Take Shape Share) initiative with a special emphasis on teachers as content producers. In the TSS project:

- Teachers learn to produce digital content and register it in the **repository**

- Students learn how to find content and store it in their **portfolio**
- Teachers learn how to retrieve learning objects from the repository and place them inside a VLE
- Teachers learn how to manage learning material within their own field

The FENC repository is linked to EDUREP developed by Kennisnet so it is possible to search in various repositories at the same time.

Furthermore, TSS Europe has cooperated with Wimba to produce a new version of Wimba Create (an MS Word based authoring tool) that supports the Dutch LOM metadata profile. Wimba Create was considered very important for the project as an authoring tool not too far from the daily practice of most teachers. Teachers at participating colleges receive training during three hour workshops, which also include the upload of produced content to the repository.

Some important challenges TSS is currently facing:

- Establishing a sharing culture – responsibility is divided between management and teachers
- Sharing is a very social thing and often something that is only done upon request (a facility often not present within repositories)

Relevant links:

- [Download presentation](#)
- [www.tsseurope.eu](http://www.tsseurope.eu)

### ***The teacher as an author***

Ger Thielemans from Lyceum Enschede in Stedelijk demonstrated how they use their VLE to produce and share learning objects. Their mindset is that content has to be easy to produce and adapt, accessible at all times and “fit for purpose”.

This was used to initiate a plenum discussion on issues such as:

- How do we overcome barriers of getting teachers to share?
- What? – A new standard...but now I just thought SCORM was the solution?
- Web 2.0 and social networking: How can (should?) these be blended into traditional repositories?
- Engaging teachers: How should we motivate the bulk part of teachers that are not motivated by the technology itself?
- Who should we encourage to publish – schools or individual teachers? And what would the consequences be?

Relevant links

- [www.deonderwijsvernieuwingscooperatie.nl/](http://www.deonderwijsvernieuwingscooperatie.nl/)

## ASPECT

Frans van Assche from EUN gave a presentation of the new best practise network ASPECT with experts from all major international standardisation bodies and consortia active in e-learning (CEN/ISSS, IEEE, ISO, IMS, ADL). ASPECT, which is an acronym for Adopting Standards and Specifications for Educational Content, is a European best-practice network. The objective is to specify, develop and inform stakeholders in the educational community of best practice approaches to implementing standards for both educational content discovery and use.

The partners include nine Ministries of Education, four commercial content developers and leading technology providers. Among the people involved are experts from all international standardization bodies and consortia active in the e-learning area.

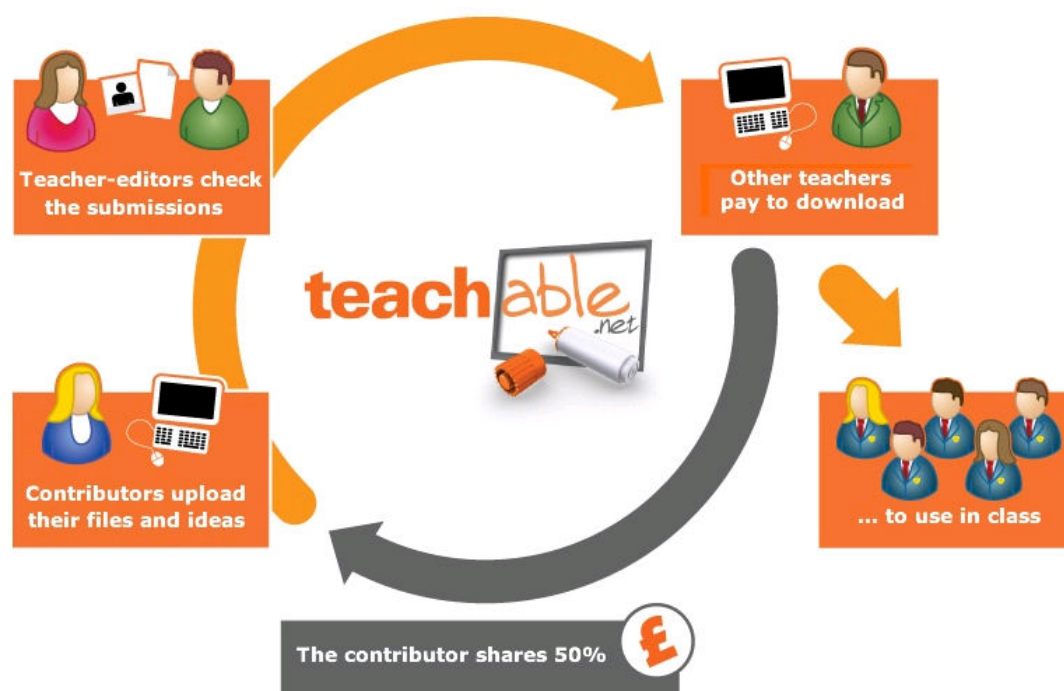
Expert and content providers from a range of European countries will work together on improving the use of standards and specifications relating to educational resources and repositories. Standards and specifications suggested by standardization bodies and experts will be put into practice by the content providers. In return they will provide feedback on advantages and disadvantages of the proposed standards and specifications seen from their point of view.

Relevant links:

- [Download presentation](#)
- [ASPECT website](#)

## Teachable.net

Edward Upton from teachable.net (a new associate member of EdReNe) gave a brief introduction to the organisation and the business model for producing and sharing content. The figure below illustrates how teachable.net works:



teachable.net accepts material from any contributing teacher (also from small commercial publishers), moderate it for quality, and charge other users per file to download it. All content is made available under an adapted Creative Common license, allowing use within schools. A learning object should be enough for at least one learning lesson.

Teachable.net has developed advanced skills in online marketing and building enthusiasm within the online teacher community (with more than 50,000 unique visitors to the site monthly shortly after launch) and can advise other members on how to use these tools. Subsequent discussion focused both on details of the business model, quality assurance strategies and why teachable.net does not focus on standardized content packages.

Relevant links

- [Download presentation](#)
- [www.teachable.net](http://www.teachable.net)

### ***UNI-Login – a national educational single sign on solution***

Michael Viskum from UNI•C presented a national educational single sign on (SSO) solution for the educational sector. UNI•C has over the past years developed a unified login for several web services in the Danish educational sector.

More than 750.000 teachers, students and administrators have a unique UNI-Login userid and password.

The services UNI-Login provides access to include: national tests from the Ministry of Education; online subscription based content services from private publishers; streaming video archive from national broadcaster (DR); VLE/intranets at school level; local network access at schools and all online services behind login developed by UNI•C.

An important starting point for building the success of UNI-Login was to include the initial user database from a widely used national educational mail and conferencing system (SkoleKom). In this way the majority of the education community that already used SkoleKom was included from the beginning. The political decision that UNI-Login should be used for the mandatory online national tests has more recently been important to provide all students (primary and lower secondary school) with a UNI-Login.

Some of the important properties of UNI-Login are:

- An SSO proxy solution based on a Pubcookie solution initially developed by University of Washington.
- A central user database (HUGO) forms the basis for basic user authentication and authorization – (one way) synchronization with local LDAP/AD servers.
- Delegated administration to ensure quality of data.
- Basic access rights are controlled by user groups; more advanced access rights are controlled by service codes.
- Easy integration with external systems who wish to use UNI-Login as an authorization system.

Relevant links:

- [Download presentation](#)
- [OECD Country Report on Digital Learning Resources As Systemic Innovation](#) (where UNI-Login is mentioned as a major driver in Denmark)
- [Product description](#) (in Danish)

## **FEIDE**

Trond Hanssen from utdanning.no presented the Norwegian single sign on (SSO) solution Feide.

Feide is a identity management system on a national level for the educational sector in Norway. It is managed by UNINETT and is based on SAML 2.0.

Feide is based on the principle that every user in the educational sector - pupil, student or employee - receives a user name from their school, college or university, which can be used throughout the sector.

The current status is that 75% of universities use Feide, while this number is only 50% for upper secondary schools. The roll-out to primary schools is still at an early stage.

Some of the problems currently faced in Norway are:

- The chicken and the egg:
  - Institutions hesitate to implement Feide because of a lack of services using it
  - Service providers hesitate to implement Feide because of the lack of users
- There are two important national identity providers in Norway:
  - Feide.no: Educational identity provider
  - minside.no (mypage.no): governmental services.
- Many service providers use the Feide password but with a local login routine not SSO
- Users are confused by being redirected to an external login page
- Data quality: few attributes are required, no attribute for subject or discipline, user role concept not suited for primary schools.

Subsequent discussion focused on differences between SAML 1.0 and 2.0 implementation; strategies for engaging with new types of service providers; how to define a necessary set of attributes and ensure data quality.

Relevant links:

- [Download presentation](#)
- [Feide website](#) (English summary)

## ***Kennisnet Entrée: federated authentication***

Pieter Bruring from Kennisnet gave a brief introduction to Kennisnets SSO solution (Entrée) used in the Dutch educational system. The current goal of Entrée is to ensure that all VLE/LMS systems can and will be connected to Entrée using easy to implement webservice. Entrée is a cookie based federation model where the central part is an authentication engine (A-select). The solution provides a Single Sign On path directly from VLE/LMS to a service provider. There are two types of accounts: Entrée account or school account. The school

account allows users to be included directly through their schools VLE/LMS. The average development time for a VLE/LMS provider is around 2 weeks.

Entrée has a total of 600.000 educational users in the Netherlands:

- 165 schools connected (an estimated 300.000 users)
- 300.000 Entrée self-service accounts.

13 Service providers are currently connected to the federation (educational online video streaming service; government sites; educational content providers; web shop)

The A-select authentication system is a Dutch open source solution. It supports Shibboleth via an agent and filter solution. Difficulties with implementing the A-select in its native form made Kennisnet develop a cookie based extension to it, in part to meet the different maturity levels of VLE/LMS providers.

Relevant links

- [Download presentation](#)
- [www.a-select.org](http://www.a-select.org)
- [Entrée](#) (in Dutch)

### ***Common standards on interactive Whiteboard (IWB)***

Will Ellis from Becta followed up on their efforts to develop a common file format for content used in interactive whiteboards (IWB), so that teachers can export and share materials and resources irrespective of the chosen IWB provider.

Becta started the project by compiling a functionality matrix of the 10 market leading suppliers of IWB software in the UK in order to find the features that could form the basis for a common file format.

Having completed this they entered discussion with the major suppliers to obtain their feedback.

The common feature set was then mapped to an SVG file format, with various 'extensions' incorporated to form the IWB file format. The file format and documentation was then provided to the leading suppliers for discussion.

The current status is that most of the major IWB suppliers have now agreed to support the new IWB common file format.

Relevant links

- <http://industry.becta.org.uk/display.cfm?resID=38729>

### ***Group session 1: User stories relating to the content value chain***

The aim of the group session was to identify and discuss the most important user stories from the perspective of different stakeholder groups and add examples of interesting practice.

A user story is in this context defined as a short description of an action, including:

- the stakeholder who performs the action,
- the goal this action intends to meet, and
- the reason to meet this goal

The following groups were established each with a different focus on the roles/stakeholders:

- Group 1: Teacher/Student as a content consumer/author
- Group 2: Commercial content provider (e.g. publisher)
- Group 3: Public content provider (e.g. museum)
- Group 4: Repository owner
- Group 5: Tool provider
- Group 6: Political decision maker

As part of the discussion of user stories, participants were also asked to estimate the current outreach and identify barriers and drivers to reaching the goal described in the individual user story.

Groups used a common online database tool (blist.com) for collecting user stories and making them available through the Members Zone. A total of 39 user stories were proposed during the session. The collective set of user stories was subsequently used as input for the next group session.

### ***Group session 2: Input to the Thematic synthesis report***

The purpose of this group session was to provide input to the thematic synthesis report on standards and interoperability. Based on the user stories, estimation of current outreach, examples provided and other relevant background material, the session task was to evaluate the following from the user perspective assigned to the different groups:

- Current status
- Barriers and possible incentive schemes to the adoption of standards
- Important next steps / focus areas.

The completed documents were uploaded and made available in the Members Zone.

The results of this session – along with the collected user stories - will form the basis of the forthcoming thematic synthesis report and will therefore not be presented in these proceedings.

### ***Models for adoption of standards (discussion)***

The plenum discussion following the group session briefly introduced the main point from the different stakeholder groups.

No clear consensus or conclusion on the detailed issues was reached, but a prominent theme for most of the topics discussed was the importance of ensuring that specifications and standards are developed to very closely match actual – and not just anticipated – user needs. As an example, seen from the perspective of teachers and students ease of use, flexibility and having interactive content seems much more important than ensuring interaction with

VLE/LMS tracking/scoring systems and/or ensuring. Another example is commercial providers that do not opt for educational standards due to the large investments necessary, insecurity on which of a number of standards will prevail and differences in implementation of standards by e.g. VLE/LMS vendors.

There was also a debate on the complexity of current educational technology standards compared to the seemingly more successful micro-formats employed more broadly on the web. Again supporting the notion to design for humans first, machines second and reuse building blocks from widely adopted standards instead of developing new.

### ***Workshop evaluation***

Due to time constraints this was limited to a five minute oral evaluation. Group discussions, where participants chose which group to join according to their “preferred” stakeholder perspective, was as a positive element. The authentication theme, showing similarities and differences between national approaches had also proved helpful to members facing the same challenges in a near future.

## Participants

15 of 23 founding members were represented. In addition five associate members participated – giving a total of 32 participants.

Name	Organisation	Country
Will Ellis	Becta	U.K.
Andrew Kitchen	Becta	U.K.
Jens Viggo Moesmand	BFU	Denmark
Rosa Maria Gómez de Regil	CNDP	France
José Moura Carvalho	DGIDC	Portugal
Orland Cardona Perez	EAPC	Spain
Astrid Leeb	Education Highway	Austria
Richard Millwood	Eenet	U.K.
Adam Bates	Encyclopaedia Britannica Education	U.K.
Frans Van Assche	EUN	European Schoolnet
Fabrizio Giorgini	GIUNTI Labs	Italy
Peter Vinnervik	IML	Sweden
Leif Marklund	IML	Sweden
Jeroen Hamers	Kennisnet	Netherlands
Jan Kees Meindersma	Kennisnet	Netherlands
Henk Nijstad	Kennisnet	Netherlands
Jos van der Arend	Kennisnet	Netherlands
Pieter Bruring	Kennisnet	Netherlands
Leonie Verhoeff	Kennisnet	Netherlands
Jim Henderson	Learning and Teaching Scotland	U.K.
Andy Pendry	Learning and Teaching Scotland	U.K.
Fiona Iglesias	North West Learning Grid	U.K.
Christina Szekeley	Skolverket	Sweden
Peter Karlberg	Skolverket	Sweden
Edward Upton	Teachable	U.K.
Triin Kangur	TLF	Estonia
Kadri Stenseth	TLF	Estonia
Tommy Byskov Lund	UNI-C	Denmark
Michael Viskum	UNI-C	Denmark
Lars Ingesman	UNI-C	Denmark
Vladimir Batagelj	UNI-LJ-FMF	Slovenia
Trond Hanssen	Utdanning.no	Norway