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# ASPECT

# Report on Summer School

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# Executive summary

Deliverable D6.3 presents the ASPECT summer school that took place in Lisbon in May 2010.

This third and final teacher workshop organized by the ASPECT project gathered together 44 teachers from Belgium, Lithuania, Portugal and Romania. The primary objective of this summer school was to explore how learning content standards, such as SCORM and Common Cartridge, can be exploited by teachers and how different types of "content packaging" can add value to the learning experience.

The workshop was organised around three main tests, each of which was followed by teachers completing a questionnaire and being involved in open discussion.

All three tests were designed to serve both as a basic training on the use/features of different types of packaged content while, at the same time, obtaining teachers' reactions with regard to their interest in content packaging and the usefulness and ease of use of content packages in their everyday teaching.

The first test collected feedback from teachers with regard to various types of packaged content; the second addressed the issue of digital credits; and the third allowed teachers to explore in greater depth the functionality and benefits of two packaging formats (SCORM and Common Cartridge).

The full results of this third ASPECT workshop will be presented along with the results of the two preceding ones in a final validation report in November 2010. The summary provided in this deliverable contains some preliminary suggestions and initial results.

**Key initial findings:**
The ASPECT validation included a small focus group of teachers with relatively high levels of ICT skills, the project and the initial findings of the project must be seen in this context.

1.  There has been a considerable increase since the first workshop of teachers' positive attitudes towards and interest in resources, repositories, content packaging and the ASPECT project.

2.  Generally, ASPECT teachers reacted to SCORM resources in much the same way that they treated unpackaged content; for example, they did not see much difference between having a SCORM resource and a PowerPoint presentation.

3.  Teachers were very enthusiastic about Common Cartridge content packaging. After importing a CC package into Moodle, the teachers could remove parts that they did not need, edit the content and change the order of different resources. Teachers liked this possibility of being able to embed only parts of a Common Cartridge package in a VLE, or even blogs or websites, which is not possible to do with SCORM packages.

4.  Many teachers requested instructions on how to adapt Moodle to use Common Cartridge packages and some teachers expressed an interest in using Common Cartridge to package their own content in order to share it with other teachers.

5. Before the Lisbon workshop, we had anticipated that some teachers might be enthusiastic about Common Cartridge. However, while we thought teachers would appreciate the possibility of importing a cartridge into Moodle and then moving and/or changing some parts of the resource, we were unprepared for the high level of positive reaction that we witnessed.

6. When it comes to buying commercially-produced learning resources using digital 'credits', teachers felt that they should not be expected to buy these materials themselves but preferred a situation where the school, or even the Ministry of Education, purchased a license for using these resources.

7. Teachers' views on the LRE portal were generally positive; the LRE was considered a useful alternative to Google, particularly when teachers are faced with an overwhelming volume of information as a result of a Google search. However, teachers also suggested how improvements could be made to the LRE.

8. Teachers have higher expectations when using a dedicated educational resource portal compared to Google or other internet sources. They expect to find a large number of relevant resources in portals like the LRE and are impatient if they find broken links or resources of low quality. It is important, therefore, that educational resource portals implement effective quality assurance procedures as well as offering a critical mass of resources.

9. The experiences of running the ASPECT workshops for teachers proved once more the importance of enabling teachers from different countries to work together. The workshops not only contributed to the professional development of the teachers themselves but enabled the ASPECT work on learning content standards to provide real added value at European level.

# Contents

# 1   Context of the Aspect Summer School

On 8 May 2010, the ASPECT Summer School gathered in Lisbon (Portugal) 44 teachers from Belgium, Lithuania, Portugal and Romania to discuss the use of online resources and learning content repositories in mathematics and science lessons, and more specifically to learn about content packaging and integration of resources into learning platforms. The main aim of the ASPECT Summer School was indeed to explore how learning content standards, such as SCORM[2] and Common Cartridge[3], can be used by teachers, and how different types of "content packaging" can add value to the learning experience.

The Summer School was the third and final teacher workshop organized by the ASPECT project. All three workshops combined straight-forward assignments with more free-browsing activities in order to obtain first-hand, direct feedback (surveys and interviews) from the teachers.

In October 2009 we organized four national workshops. The particular focus of the workshops was on how teachers search for and discover resources contained in learning content repositories such as the Learning Resource Exchange for schools. Apart from usage we were also interested in getting their impressions about the LRE portal as a resource for their daily work.

The second workshop took place online and was organized in March 2010. Its main aim was to analyze teachers' search behavior and their attitudes towards reusability and sharing of resources, i.e. under what kind of conditions would teachers trust or share resources, in particular when it comes to tags, ratings, authors (content providers) and other quality assurance methods used in the repositories.

This third session, organized in Lisbon, concentrated on the integration of resources into learning platforms (VLEs) and content packaging. Here teachers were initially asked to create a normal lesson plan using the Moodle learning platform in a "traditional" way by combining different resources. Then they were asked to repeat the same task using resources that had been 'packaged' by ASPECT content developers using both the SCORM and Common Cartridge standards. Finally, teachers also had to think about the use of digital credits to buy or access digital online resources.

The present document briefly describes the logistics and organizational side of the Summer School and then goes into more detail about the content of the event and the initial results gathered from it. The detailed research findings of the workshops will be analyzed and reported in *D.6.4. National Validation reports* and *D.6.5. Final Report on the Experimentation*.

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[2] http://www.aspect-project.org/node/70

[3] http://www.aspect-project.org/node/71

## 2   Organization of the summer school

*Direcção Geral de Inovação e Desenvo* (DGIDC, Portugal) led the logistics of the organization of the workshop.

*SIVECO* (Romania), *EDUCENTRUM VZW* (EduC, Belgium), *Svietimo Informaciniu Technologiju Centras Valstybes Biudzetine Istaiga* (ITC, Lithuania) *and DGIDC* were in charge of organizing teachers' travel from their home countries to the workshop location in Lisbon.

### *2.1   Agenda*

**Friday May 7**

Arrival of participants and welcome dinner at Hotel Londres at 20:30.

**Saturday May 8**

| From | To | |
|------|------|---|
| 8:30 | 9:00 | Departure from hotel Londres (bus to Hotel Inglaterra – venue of the workshop) |
| 9:00 | 9:15 | Welcome |
| 9:15 | 09:45 | Distribute attendees/ connect laptops/ check internet connection |
| 09:45 | 10:00 | Present agenda/ exercises |
| 10:00 | 11:00 | Task 1: Guided exercise on content packaging and VLE's |
| 11:00 | 11:15 | Coffee break |
| 11:15 | 12:15 | Task 1: Guided exercise on content packaging and VLE's (conclusion) |
| 12:15 | 12:45 | Questionnaire 1 |
| 12:45 | 13:30 | Discussion on packaged content and VLE's (in small groups) |
| 13:30 | 15:00 | Lunch |
| 15:00 | 15:20 | Task 2: DRM/ Privacy |
| 15:20 | 15:40 | Questionnaire 2 |
| 15:40 | 16:00 | Discussion on DRM/ Privacy (in small groups) |
| 16:00 | 16:15 | Break |
| 16:15 | 17:00 | Task 3: Packaging features and benefits: video + free browsing through the selection of resources |
| 17:00 | 17:20 | Questionnaire 3 |
| 17:20 | 17:50 | Discussion on packaging features (in small groups) |
| 17:50 | 18:00 | Fill in workshop evaluation form |
| 18:00 | 20:30 | Visit to Lisbon |
| 20:30 | 22:30 | Dinner in Lisbon/ Casa de Fados |

**Sun May 9**

Departure of participants

The agenda was mainly carried out according to plan, although the running order of some sessions was changed owing to some broadband/network delays at the location. All the tasks were carried out as anticipated and all surveys were completed. At the end of the workshop, teachers also filled out an event evaluation form evaluating how the summer school had worked for them.

## 2.2 Summer school list of attendees:

Teachers:

| Lithuania | | |
|---|---|---|
| 1 | Davidonytė | Edita |
| 2 | Adomaitis | Irmantas |
| 3 | Žuklijienė | Sigita |
| 4 | Lozda | Petras |
| 5 | Štaupienė | Rita |
| 6 | Vaivadienė | Eglė |
| 7 | Jarmalaviciene | Reda |
| 8 | Kiniulis | Antanas |
| 9 | Vitkevičienė | Rasa |
| 10 | Airošius | Norbertas |
| 11 | Sėrikovienė | Silvija |
| **Romania** | | |
| 1 | Jeanina | Carstoiu |
| 2 | Mariana | Mustata |
| 3 | Adriana | Nica |
| 4 | Mirela | Minea |
| 5 | Corina | Dobrescu |
| 6 | Florina | Stan |
| 7 | Vasile | Roman |
| 8 | Marian | Tache |
| 9 | Dorina | Jugureanu |
| 10 | Gina | Vasile |
| 11 | Ana Maria | Arisanu |
| 12 | Mihaela | Garabet |

| Belgium | | |
|---|---|---|
| 1 | Vleugels | Eddy |
| 2 | Verbruggen | Katrien |
| 3 | Blendeman | Dirk |
| 4 | Baki | Fatiha |
| 5 | Mebis | Jeroen |
| 6 | De Sutter | Lieve |
| 7 | Van Eetvelde | Geertrui |
| 8 | Anckaert | Inge |
| 9 | Verrelst | Martine |
| 10 | Mortier | Tom |
| 11 | van Eijmeren | Marc |
| 12 | Caemaert | Freddy |
| | | |
| **Portugal** | | |
| 1 | Fonseca | António |
| 2 | Campos | Fernando |
| 3 | Cacito | Helder |
| 4 | Silva | Maria José |
| 5 | Quartin | Maria Paula |
| 6 | Silva | Maria Teresa |
| 7 | Fernandes | Miguela |
| 8 | Silva | Rui |
| 9 | Horta | Maria João |

Partners:

| 1 | Gras-Velazquez | Agueda | European Schoolnet, Belgium |
|---|---|---|---|
| 2 | Jokisalo | Elina | European Schoolnet, Belgium |
| 3 | Clements | Kati | University of Jyväskylä, Finland |
| 4 | Moura Carvalho | Jose | DGIDC, Portugal |
| 5 | Pedroso | Jose | DGIDC, Portugal |
| 6 | Sacramento | Elvira | DGIDC, Portugal |
| 7 | Craeye | Pascal | EduCentrum, Belgium |
| 8 | Oprea | Delia | Siveco, Romania |
| 9 | Florea | Monica | Siveco, Romania |
| 10 | Navickiene | Virginija | ITC, Lithuania |

### 2.3 Teachers' opinions

What should be particularly highlighted is the enthusiasm the teachers expressed towards networking and sharing their experiences with accessing learning content repositories and using online resources. The ASPECT teachers met each other in person (not online!) for the first time on the occasion of this third workshop and fully took advantage of the possibilities for knowledge exchange that it represented. The opportunities to discuss issues during the workshops as well as to network over dinner provided a lot of animated and very valuable exchanges related to Mathematics and Science lessons and the use of online teaching resources, seen from different European perspectives.

During the workshop, the participants seemed to particularly enjoy learning from each other and helping out their "colleagues" while browsing on the web, showing each other new "tricks" and sharing ideas on accessing online resources. They were also very satisfied with the discussions and being able to express their feelings about the use of the learning content standards being addressed. For the teachers with lower levels of ICT competence, it was very reassuring for them to realize that they were not 'bottom of the class' and that the other teachers also had similar insecurities and difficulties; this allowed them to feel more free about asking questions and thus, improved their confidence in using those resources.

## 3   Content of the summer school

### 3.1 The tests

The primary aim of this Summer School was to explore how learning content standards (such as SCORM and Common Cartridge) can be exploited by teachers and how different types of "content packaging" can add value to the learning experience.

As seen in the agenda, the workshop was built up around three main tests, each of them followed by two types of feedback methods involving questionnaires and open discussions.

All three tests were designed to serve both as a basic training on the use of different types of packaged content and their features (necessary as the teachers had no previous experience with this kind of content) and, at the same time, provided an opportunity to obtain teachers' reactions with regard to their interest in content packaging and the usefulness and ease of use of content packages in their everyday teaching.

### 3.2 Test 1

A key part of the Lisbon workshop was focused on how ASPECT teachers understood and were able to work with different content packaging standards. The concept of content packaging had already been presented during the first national workshops in October 2009. However, it was not until the third workshop in Lisbon, when the teachers could actually see and use some packages, that they were really able to get to grips with what content packaging was for and how different approaches to content packaging could impact on how they used and adapted learning resources. The objective of test 1, therefore, was to obtain feedback on how teachers would react to various types of packaged content.

For the test we had an Math Science and Technology (MST) resource on thermodynamics from the University of Ljubljana, The resource was available in three different formats: as a non-packaged resource, as a SCORM package, and as a Common Cartridge package.

In the test the teachers were first asked to create a normal lesson plan using the Moodle learning platform in a "traditional" way by combining different resources. Then they were asked to repeat the same task using a resource on the same topic that had been 'packaged' by ASPECT content developers using both SCORM and IMS Common Cartridge. The test task was to create a simple lesson plan within Moodle made up of some text, an image, a quiz and a forum, on the topic of thermodynamics, using four different approaches:

1. Using non-packaged content
2. Using the entire SCORM package (created from the non-packaged content)
3. Using an entire IMS Common Cartridge package (created from the non- packaged content, with a forum added)
4. Using selected parts from the IMS Common Cartridge package

Generally, ASPECT teachers reacted to SCORM resources in much the same way that they treated unpackaged content; for example, they did not see much difference between having a SCORM resource and a PowerPoint presentation. While they saw that a SCORM package could include more than one resource (see fig.1), they did not use it any differently than a PowerPoint; both types of content were integrated into a Virtual Learning Environment (VLE) as a single, unmodifiable entity (see fig. 2).



*Fig 1: SCORM package appears in Moodle as a single entity.*
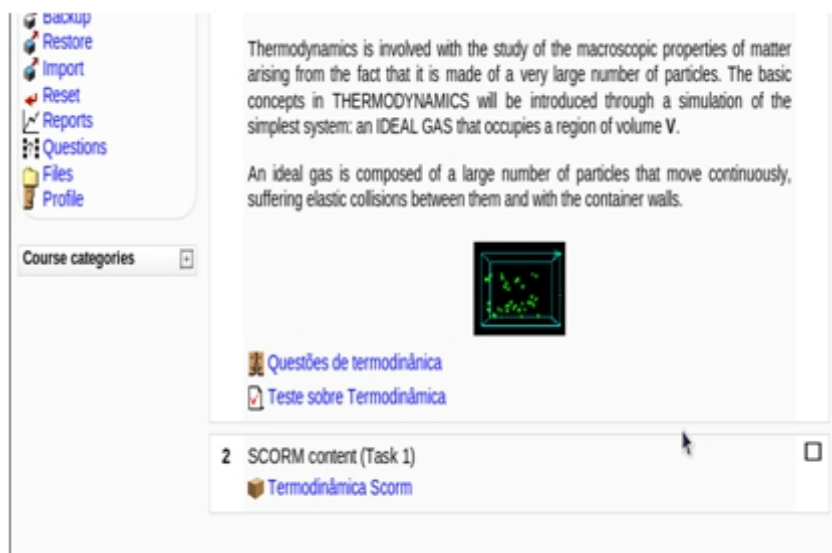
*Fig 2: ASPECT teachers saw no difference between linking to a SCORM package, a PPT or image. The larger the SCORM package, the more unwieldy it also seemed for those teachers who wanted to adapt the resource or use only some parts or it.*

In comparison, the teachers were very enthusiastic about Common Cartridge (CC) content packaging. After importing a CC package into Moodle, the teachers could remove parts that they did not need, edit the content and change the order of different resources (see fig. 3). Many teachers requested instructions on how to adapt Moodle to use Common Cartridge packages and some teachers expressed an interest in using Common Cartridge to package their own content in order to share it with other teachers.

Before the Lisbon workshop, we had anticipated that some teachers might be enthusiastic about Common Cartridge. However, while we thought teachers would appreciate the possibility of importing a cartridge into Moodle and then moving and/or changing some parts of the resource, we were unprepared for the high level of positive reaction that we witnessed.
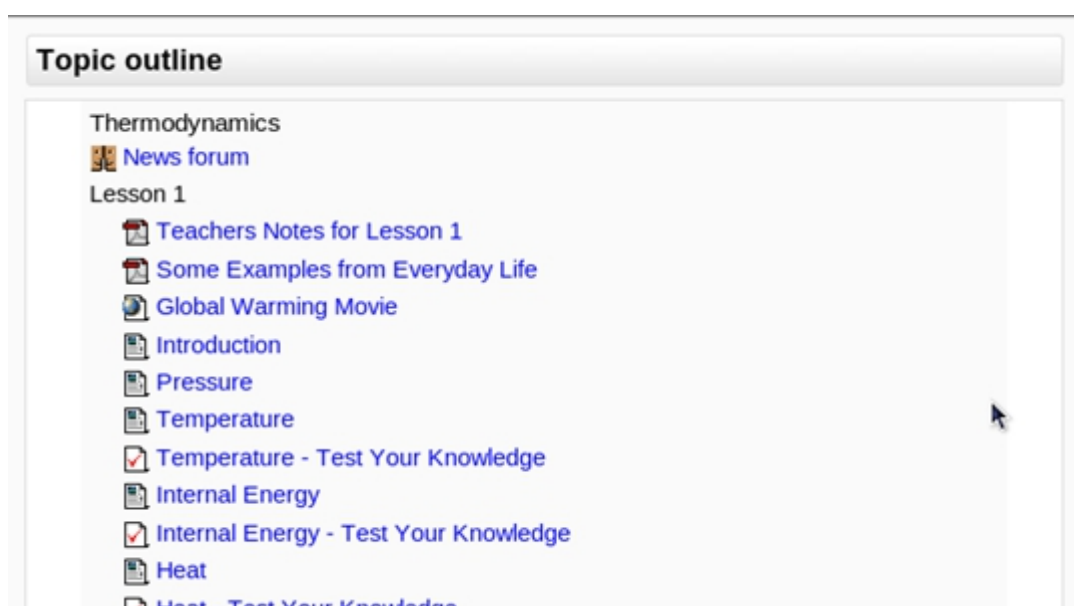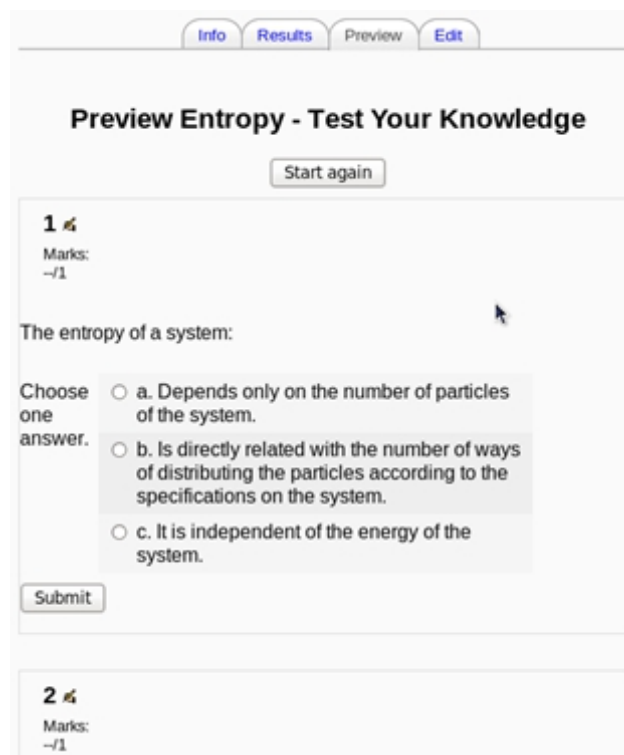


*Fig 3: In Moodle a Common Cartridge package was split up into its constituent parts. Each of these parts can then be individually moved and/or hidden.*

A problem for the teachers was that they found it difficult to understand why SCORM and Common Cartridge packages had to be integrated into Moodle in different ways: SCORM has to be added through a "Add SCORM activity" function and Common Cartridge is added through a "Upload files" --> "Restore backup" function.

Most teachers had little interest in simply viewing and playing SCORM or Common Cartridge packages. On the other hand, apart from the option to upload the complete packages into a Virtual Learning Environment and have the different parts of the package converted into Moodle format, (as shown in fig. 4 for a questionnaire), the teachers liked the possibility of being able to embed only parts of a Common Cartridge package in the VLE, or even blogs or websites, which is not possible to do with SCORM packages (see fig. 5). While this second option did not take advantage of the VLE's features, teachers liked having the possibility to only integrate in their courses the parts of the cartridge that they liked or thought were relevant to their lesson.



*Fig 4: Questionnaire from a Common Cartridge package converted into Moodle format.*
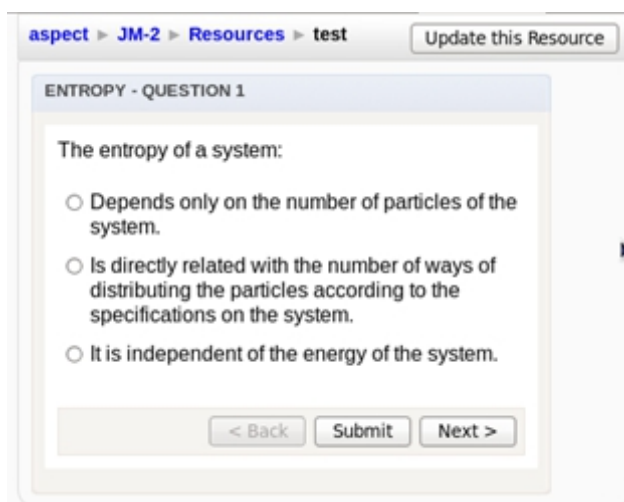
*Fig 5: Questionnaire from a Common Cartridge package embedded into Moodle. The questionnaire can be used independently from the rest of the package but it does not make use of Moodle features.*

### 3.3  Test 2

The Summer School also addressed the issue of digital credits, i.e. the possibility for teachers to gain credits by rating and uploading materials and then using their credits to download other resources.

The primary objective of test 2 was to obtain some input concerning the use of digital credits. As preparation we had previously tagged a number of resources so as to require the use of credits in order for them to be browsed by the teachers.

The teachers were asked to go through a number of resources about half of which had been tagged so as to require the use of credits. Teachers browsed freely through the resources until their credits ran out. Afterwards they were asked to comment on the experience.

A key finding here was that, when it comes to buying commercially-produced digital learning resources, teachers felt that they should not be expected to buy these materials themselves but preferred a situation where the school, or even the Ministry of Education, purchased a license for using these resources.

### 3.4  Test 3

The primary objective of test three was simply to allow the teachers to explore in greater depth the functionality and benefits of the two packaging format.

The teachers went through a number of packages, including both SCORM and Common Cartridge resources, and considered their benefits, which ones they liked and why, etc. This task highlighted the features of the packages themselves independently of any VLEs.

### 3.5  Other relevant input

Among other things, the tests mapped the attitude of teachers towards use of digital resources and repositories and sharing of resources. Based on the tests, once a teacher figured out how to do a particular task, i.e. finding a particular resource through a combination of selecting a certain subject and/or interface language, the information was shared between all teachers

within minutes and they could all do it. Generally, teachers were very keen to share knowledge but mainly among colleagues from their own country. Not surprisingly, language barriers tend to inhibit the free sharing and exchange of both knowledge and resources and, during the international workshop in Lisbon, the teachers needed some encouragement before they felt comfortable about interacting with colleagues from other countries.

It was good to observe though that the views on the LRE portal were generally positive; the LRE was considered a useful alternative to Google, particularly when teachers are faced with an overwhelming volume of information as a result of a Google search. ASPECT teachers, however, also suggested how a number of improvements could be made to the LRE; for example, by including more and better content from national resource portals, by improving classification and coverage of resources by subject and age range, and by extending the multilingual interface.

In the ASPECT tests the Portuguese and Belgium teachers particularly felt that they could not search the LRE portal in their respective languages. As one Portuguese teacher explained, if he searched for "vulcão", he would expect to find all resources that have something to do with volcanoes, regardless of the language the resources are in. At present though only a limited number of words are included in the ASPECT vocabulary bank which is designed to facilitate these sorts of inter-language searches. In many cases, the only way to find the resource is still to carry out a search using English terms. To overcome this problem, some Lithuanian teachers translated the search terms into English before conducting a search, which is something they are used to doing in their classroom practice.

The teachers also stated that their expectations in using a dedicated resource portal are higher than when using other Internet sources. This may also be a factor in why unsatisfactory search results do not frustrate teachers as much when they used Google as compared to the LRE portal; Google does not claim to be a resource portal that is specifically targeted at teachers like the LRE. Teachers, therefore, expect the LRE to provide exactly what it claims to offer - thousands of resources for each curriculum subject and for different age groups of pupils. The existence of so many options for filtering LRE resources similarly raises teachers' expectations that they can expect to find a large number of relevant resources.

### 3.6   Complete validation results

The activity of the teachers in all the three workshops has produced a significant quantity of data which is now being processed. The preliminary impressions and comments presented in this report will be supported with quantitative data which will be analyzed and presented taking into account the teachers' gender, nationality and ICT skills. The full report on the ASPECT validation will also look at teachers' reactions to DRM and using credits to access LRE resources. The national reports and the complete ASPECT validation report are expected at the end of October and November 2010 respectively.

### 3.7   Videos/ opinions of teachers on packaging

Participating teachers were interviewed during this third workshop, videos of those interviews can be found at the following address: http://aspect-project.net/node/88

## 4   Suggestions

ASPECT partners appreciate that its findings are based on work with a very small focus group of teachers with relatively high levels of ICT skills. Nevertheless, when the data analysis is complete, the project hopes to be able to make some recommendations in terms of useful next steps.

For example, some preliminary suggestions include organizing online training sessions or webinars for advanced users on: how to adapt Moodle so that it can be used with IMS Common Cartridge packages; and on how to connect Moodle to the LRE portal. Less advanced teachers could also possibly benefit from a basic training on IMS Common Cartridge that includes a step-by-step introduction on how to integrate these packages into a Moodle environment.

With regard to content packaging standards generally, however, while we think it would be interesting and useful to familiarize teachers with the broad concepts, we also need to recognize that many teachers still struggle to obtain the basic IT skills which are more essential for their day-to-day work. In our opinion, therefore, training in content packaging standards may be something that remains of interest to a fairly small number of European teachers.

However, the message from the teachers was clear: They would use both SCORM and IMS Common Cartridge packages if high quality resources were available in these formats. Perhaps the biggest problem for reuse of educational resources is not the teachers' ICT skills but their faith in repositories which are able to provide resources that teachers can trust. After browsing through two broken links or a few resources which are not of good quality according to them, teachers are ready to give up on a repository. It is not enough simply to have a critical mass of available content . If we want teachers to reuse content, we also need educational content repositories that have implemented effective quality assurance procedures.

## 5   Conclusions

A general impression shared by the organizers of the workshop was that there had been a significant increase in teachers' positive attitudes and interest in resource repositories, content packaging and, above all, the ASPECT project, since the first workshop. Indeed, in the national workshops in October 2009 teachers had been skeptical about the uses and advantages of the LRE and content packaging. However, they left the Lisbon Summer School eager to know more about how to include Common Cartridge plugins in their own virtual learning environments (VLE) and were keen to use learning content packaging in the future.

A similar view was expressed by Belgian teacher-coordinator Pascal Craeye from KlasCement, who viewed ASPECT as a difficult and technical project aiming to bring the teachers and content together.

> "After the first workshop, the teachers could not yet understand how to use the LRE portal and preferred their own national portal better. Finally, the third workshop managed to convince the teachers of how they can use content by importing it easily into their VLE (e.g. Moodle). Standards did their job very well!"

The experiences of running the ASPECT workshops for teachers proved once more the importance of enabling teachers from different countries to work together. The workshops not only contributed to the professional development of the teachers themselves but enabled the ASPECT work on learning content standards to provide real added value at European level.