Project Agreement Number: 2004-3324 / 001 - 001 ELE-ELEB12

Project funded by the European Commission:

Directorate-General for Education and Culture

eLearning

Document Title:	Final report pilot 3 Exchanging content between different e-learning systems
Document Identifier:	
Date of Issue:	April 24, 2007
Author(s):	Louwarnoud van der Duim
Contributor(s):	Henk van der Veen
Contact name:	Louwarnoud van der Duim
Organisation:	University of Groningen
Address:	UOCG P.O.-box 800 9700 AB Groningen
Telephone:	+31 50 3634915
E-mail address:	l.a.van.der.duim@rug.nl
Approval Status:	Final
Number of Pages:	5
Confidentiality Status:	Open

History

Version Number	Date	Revised by
1.0	April 24th 2007	LAD

Final Report Pilot 3:
Exchanging content between different e-learning systems

ABSTRACT

This report gives an account of the activities undertaken in Pilot 3 of the VICTORIOUS Project on ways to let students exchange content between the same or different electronic learning environments. This is done by researching the standards that are available for doing this and also by trying out what works in exchanging content.

CONTENTS

1. INTRODUCTION

In doing this pilot we responded to two interconnecting developments that we think have an impact on the quality of the future workers in Europe.

The first development is that almost all universities use electronic learning environments in there education. All of the universities in the Victorious project do so. Faculty use these learning environments to deliver courses to their students. A lot of content students have to use for their courses is therefore stored in these learning systems. The content in the learning systems usually is not available to students outside of these systems.

The second development is the increased student traffic between universities. Students spend growing amounts of time studying outside their home university. Therefore the need rises to be able to take the course contents that were given to the student from one learning environment to an other. Like they could bring books and journals home with them in the past.

2. RESEARCH QUESTIONS

In doing this pilot we have looked into five questions:

1. What Electronic Learning Environments do the partners in Victorious use
2. What standards for exchanging content do these ELE's use
3. Can students use these standards to import content obtained elsewhere
4. Does the ELE provide students with the means to take course material with him/her
5. Do exchange students have problems with losing course content when returning to their home university

On top of answering these questions we have tried to take course content from one system to another and discussed how feasible it would be for students to do this.

3. ELECTRONIC LEARNING ENVIRONMENTS IN USE BY PROJECT PARTNERS 3

The universities in the Victorious project use several Electronic Learning Environments. Four of them use Webct and three use Moodle or Blackboard. Three universities use home built Learning Environments.

Some universities use one learning environment throughout their university others use several different learning environments. During the period of the Victorious project Webct and Blackboard merged so the universities in the Victorious project use only one commercial product (Webct/Blackboard), one open source product (Moodle) and three home built products.

4. SUPPORTED STANDARDS

The standards supported by the electronic learning environments that the universities in this project use are:

1. SCORM
2. IMS content packages
3. QTI

The last standard is used for the exchange of data from assessments and will not be discussed here.

The standards we see in use in the electronic learning environments are the best known and supported formats: IMS Content Packages and SCORM. The first is a format developed by IMS, a non-profit organization with about 50 organizations behind it. SCORM is US-government sponsored and is said to combine the best elements of IEEE, AICC, and IMS specifications into a consolidated document.

This means that exchanging content can be tested against standards that are representative for the state of the art of standards for exchanging content.

5. USING THE STANDARDS

Though all mayor systems are able to import or otherwise show both SCORM and IMS CP, most lack any functionality to export other formats then their own.

A positive point is that most systems can import a complete SCORM-package and treat it as a system within the system. So for example all information of all courses can be stored under one link in a course and won't interfere with the rest of the system.

There are some utilities that will convert one format of export-file to another. Like from Blackboard to Moodle, and from Moodle to HTML. These tools could be used as a starting point. We want to give the students a package that contains only the course content that is relevant for the student. So different courses should preferably be wrapped into a single unit, so it can be imported as one package. At this point of time this is not supported by the applications we researched and we estimate that it will be a lot of work to create this.

In the next section we will see that we come across a lot of problems in using these standards.

6. TRYING TO EXCHANGE CONTENT

Can students import content obtained elsewhere

To try this out we asked students from one of the universities in the project to take some of their course content with them and then find out if they could put it back into the same system it was taken from. By doing it like this we made sure that we were not hindered by problems like a different implementation of the standards.

Exporting content

The first problem we encountered is that the system we selected to use in this pilot does not support exporting course material by students. This seems to be the case in most commercial products. The only way to export course content by students is downloading every individual file in the course. Unfortunately the student is then not able to download course material like tests and discussion fora.

To tackle this problem functionality will have to be written for every system were we want to support exporting of course content by students.

For the students to progress with the pilot we provided them with a content package that was exported by a system administrator.

Importing content

The content packages as you export them are not readable offline but only if you import them into a product that support displaying this specific content package. When the students tried to import the content package into the system we used in this pilot they discovered that students do not have access to the functionality to import content packages. We then tried out the scenario where the content package was imported by a system administrator. In doing so we succeeded in importing the package but with loss of some of the content e.g. content that was produced by members in the original system that did not exist in the target system.

Conclusion

The conclusion is that even with exporting and importing content between the same systems did is hardly doable. This is due (1) to problems with the way standards are applied and (2) the functionality that students have access to within these systems.

7. OTHER OPTIONS

Recently providers of Electronic Learning Environments have started to produce tools that students can use to have an off-line version of their course. An example of such a tool is the Blackboard Back Pack system. Apart from other functionality this tool gives students the possibility to select from all the courses he is enrolled in the information that he would like to store on his own computer and take home with him after visiting an other university. Up till now this seems the best way for students to take course content with them.