

National reports on good e-learning practices. Final analyses and recommendations

BULGARIA / GREECE/ ITALY




Content

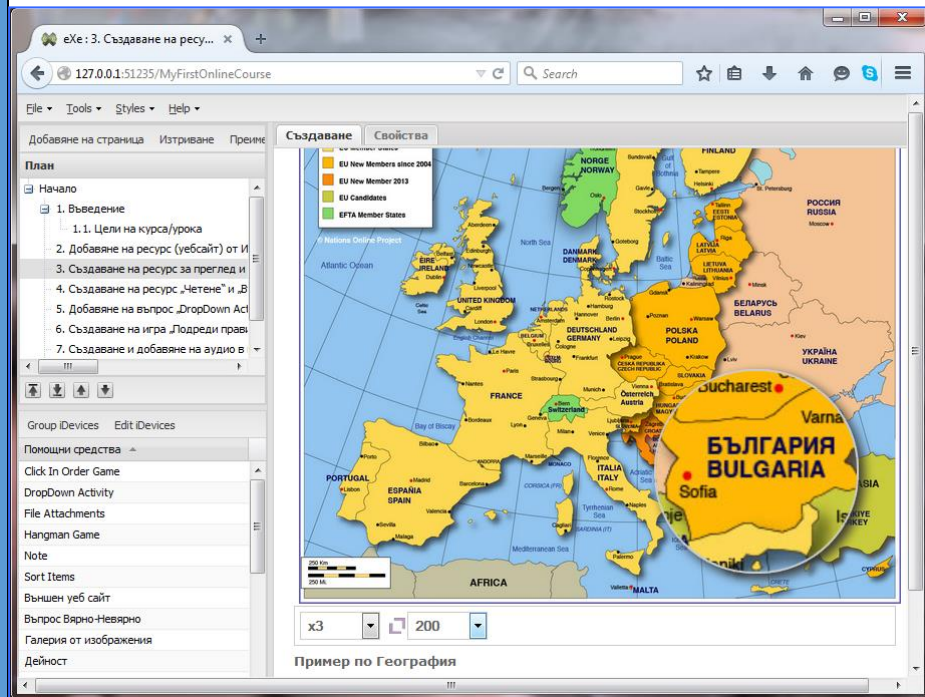
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I. National research of good e-learning practices – BULGARIA

Practice 1

Name/abbreviation	 eXeLearning
Type of practice	Open Source authoring application to assist teachers and academics in the publishing of web content.
Institution/organisation/editor	<p>2007 – 2010 - University of Auckland, Auckland University of Technology, Tairawhiti Polytechnic Institute, New Zealand</p> <p>2010 – until now - Instituto de Tecnologías Educativas del Ministerio de Educación del Gobierno de España, Spain</p>
Usability	eXeLearning is a free software tool under GPL-2
Technical requirements	eXeLearning 2.X is available for GNU/Linux, Microsoft Windows and Mac OS X. There is also a handy version for Windows called <i>ready2run</i> which runs entirely from a USB flash disk and does not require installation.
Web address/ link	http://exelearning.net/?lang=en
Users/ target group	Universities, colleges, primary schools, secondary schools, educational centers, teachers and students
Brief description	<p>eXeLearning is an effective tool for authoring learning content - an XHTML editing application that you can download onto your desktop. The application allows the author to publish content and to import it easily into any Learning Management System that supports the SCORM standards. It provides several export formats such as IMS Content Package, SCORM 1.2, SCORM 2004, as well as navigable web pages. The integration of multimedia resources is easily achieved; you can freely enhance your teaching content with images, sounds or videos from your hard disk or embed videos from YouTube. eXeLearning is organized around tools called instructional devices or iDevices. iDevices include a range of pedagogical forms (objectives, outcomes, pre-knowledge), as well as different learning activities, e.g. various question types (true-false, multiple choice, cloze questions), educational games, video and audio materials, external websites, etc. The program is highly suitable even for content creators and teachers with insufficient experience in e-learning and programming. It provides a simple, structured way to create educational content and it is pedagogically supported.</p>

SWOT




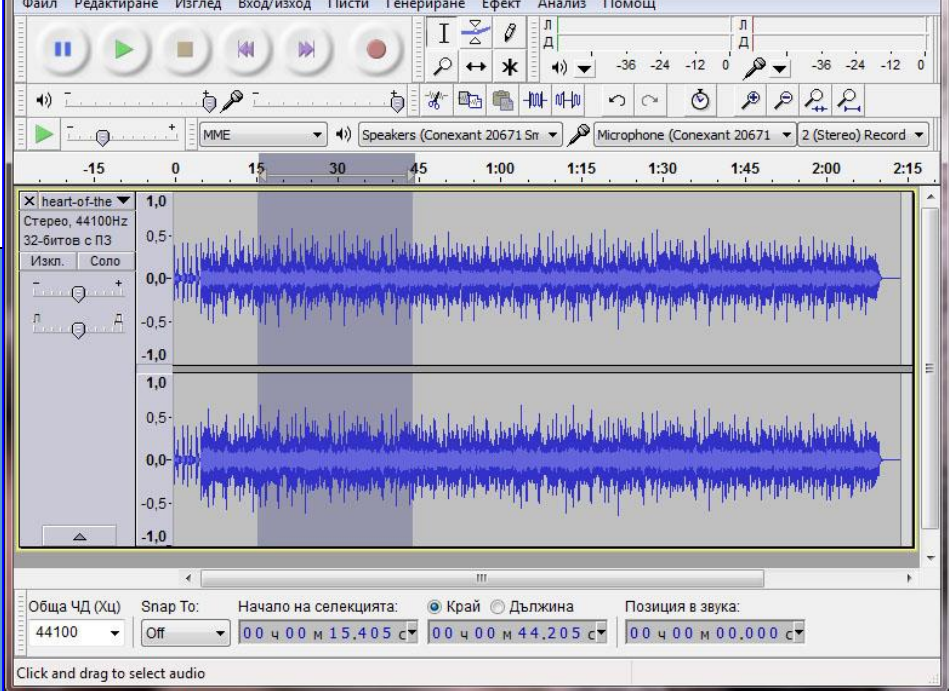
Strengths:

- One of the important advantages of eXeLearning is the ability to work off-line without the need of internet connectivity to create learning content for the web.
- Another major strength of the program is the way the teacher controls the visual aspect of his content. The HTML-editor enables you to see in real time how the final appearance of your course develops.
- The eXeLearning interface has been translated in multiple languages, including Bulgarian.
- A truly significant advantage of the application is the possibility of exporting your work in different formats such as SCORM standard, usable in different learning management systems or individual websites.
- eXeLearning offers a variety of teaching tools and it is relatively easy to use.
- You can rearrange your authoring workspace and hide the iDevices you won't be using at a certain stage of your work.
- There are ready-made style templates for the content creator to use.
- eXeLearning enables a hierarchical structure with more levels than most similar applications.

	<ul style="list-style-type: none"> - It accepts images, video, and material produced in programs such as Camtasia, Audacity, etc. - In the latest eXeLearning versions the iDevices have been enriched with additional options to create educational games such as Hangman, Memory match game, Sort items (drag and drop possibilities) , etc. - In addition to all the technical possibilities, eXeLearning also offers pedagogical tips and tools for instructional designers such as objectives of the course, outcomes, knowledge prerequisites, etc. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - If the author wants to create engaging and effective learning content, eXeLearning does not offer a sufficient number of options. In that case you have to use complementary authoring tools and additional features. - The ready-made style templates are limited in number and this could be a disadvantage for the advanced content creators. - It can be argued that the different types of quiz questions implemented in eXeLearning can be to complex. - Although the interface of the application has been translated into Bulgarian, there are major inconsistencies which makes the use and work of it quite more difficult. - From a teacher’s point of view, it offers quite a few options to create exam tests. - From a student’s point of view, it doesn’t keep history/statistics of students achievements and marks.
<p>Other comments</p>	<p>eXeLearning is supported by an international user community, translated in more than twenty languages, and offers solid documentation and help. Applications such as MsOffice and PDF are functionally compatible with eXeLearning. Furthermore, many other open source programs such as OpenOffice, Hot Potatoes, Geogebra, Audacity and CamStudio are compatible, too.</p>

Practice 2

Name/abbreviation	 Audacity
Type of practice	Free, open source, cross-platform software for audio recording and editing.
Institution/organisation/editor	Dominic Mazzoni and Roger Dannenberg
Usability	Audacity is free software, developed by a group of volunteers and distributed under the GNU General Public License (GPL).
Technical requirements	Audacity is available for GNU/Linux, Microsoft Windows and Mac OS X
Web address/ link	http://audacityteam.org/
Users/ target group	Universities, colleges, primary schools, secondary schools, educational centers, teachers and students
Brief description	<p>Audacity is a free powerful multi-track recording and editing tool. Both students and teachers can use it for different purposes. The program allows you to record live audio under Windows, Mac OS X, GNU/Linux operating systems. It provides a wide variety of possibilities to edit your audio materials - cut, copy, splice or mix sounds together. You can have some modifications on the tempo and speed of the audio without distorting its pitch. The pitch itself can also be adjusted. You can remove the noise on your recording by using the noise removal features. The fade in and fade out effects allow the author to improve the quality and make the recording more attractive. The application includes other features such as zoom, single track edit and navigation controls which make the recording process much easier. Audacity supports many audio formats such as WAV, AIFF, Ogg Vorbis (OGG), AC3, M4A and WMA. Working with MP3 files requires the installation of a separate encoder (<i>LAME</i> MP3 library) which is free for download.</p> <p>According to many professional experts, Audacity is one of the best software for audio recording and editing.</p>



SWOT

Strengths


- The first important advantage of Audacity is that it is free of charge; It is open source with a solid community support working to continually improve it.
- Audacity is relatively user-friendly and provides many possibilities to record audio materials, edit and export them in different audio formats such as mp3, wav, etc. Even the student can use it to perform various tasks and projects.
- It is compatible with Mac OSX, Windows, Linux and other operating systems.
- Audacity is suitable for detailed editing of audio and for editing audio pieces longer than an hour.
- It also supports a number of plug-ins and libraries that can expand its functionality (digital effects and filters).
- Audacity allows sample editing, importing of raw data, noise removal, pitch change, tempo change, etc.
- The program provides sufficient options to edit or delete mistakes while recording.
- Audacity web page offers documentation, FAQs and some useful tutorials
- The application has been translated in many different languages, including Bulgarian.

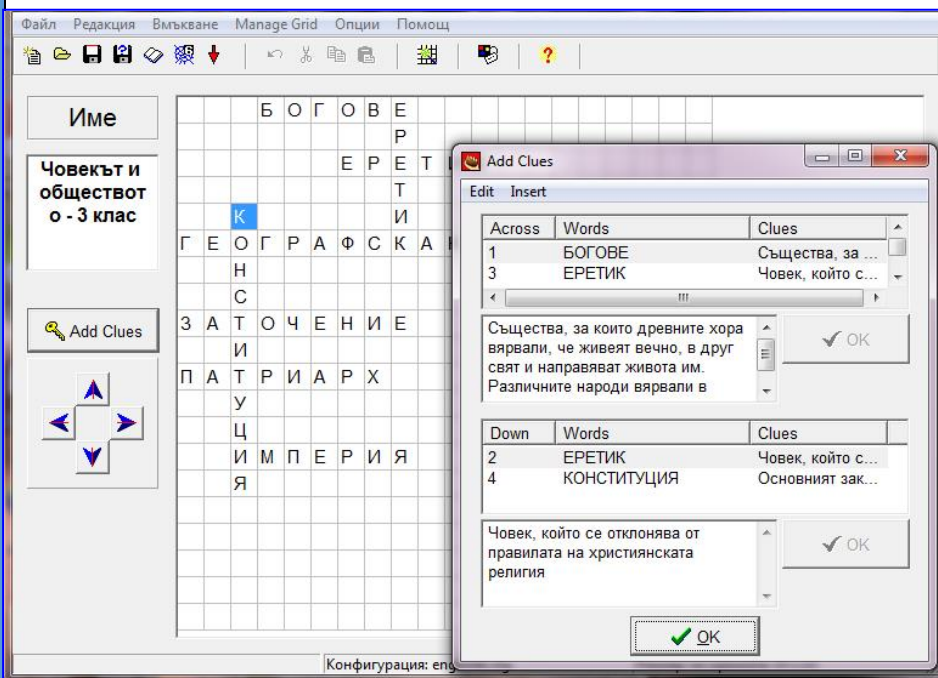
Weaknesses:

- Audacity's first major drawback is that the program is not as complete, as you will have to install plug-ins/encoders separately.
- Unfortunately, several bugs exist that can cause the program to become unstable.
- According to some experts, the program is limited in its mixing capabilities.

	<ul style="list-style-type: none">- Audacity lacks real time effects while recording.- Some aspects of the application can be a bit complex.
Other comments	<p>The free and open nature of Audacity has allowed it to become very popular in education, encouraging its developers to make the user interface easier for students and teachers.</p> <p>Teachers can use Audacity to develop podcasts and listening comprehension activities; students can perform assignments and exercises. Professionals (instructional designers and publishers) can use Audacity to make audio recordings and narrations and use them in video presentations and software simulations with Camtasia or Adobe Captivate.</p>

Practice 3

Name/abbreviation	 Hot Potatoes™ <small>From Half-Baked Software Inc</small>	<i>HotPotatoes</i>
Type of practice	<p>Freeware software for creating different types of quiz questions, crosswords, and drag and drop exercises; it offers options to combine them as well as to add other files and to build interactive learning content.</p>	
Institution/organisation/editor	<p>Half-Baked Software Inc, Canada - Martin Holmes, Stewart Arneil</p>	
Usability	<p>Freeware software</p>	
Technical requirements	<p>Hot Potatoes 6.X is available for Windows 98/ME/NT4/2000/XP/Vista and for Linux users running Wine.</p> <p>Java Hot Potatoes is available for Mac OS X, Windows, Linux or any computer running a Java Virtual Machine.</p>	
Web address/ link	<p>https://hotpot.uvic.ca/</p>	
Users/ target group	<p>Universities, colleges, primary schools, secondary schools, educational centers, teachers and students</p>	
Brief description	<p>The Hot Potatoes application has been designed to let teachers create interactive, web-based exercises that can be easily accessed by learners through internet connection with a standard Web browser. Hot Potatoes uses both HTML and JavaScript and content creators don't really need to possess any great programming skills. The program includes 6 different applications: JQuiz, JCloze, JMatch, JMix, JCross and Masher. Instructors can combine these six kinds of exercises into one unit, create a sequence of tasks and publish them as a web page, or export them as a SCORM object and use it in different Learning Management Systems. The six modules allow the teachers to create different types of question-based exercises such as multiple-choice questions, short-answer questions, gap-filling exercises, matching or ordering exercises, crosswords, jumbled-sentence or jumbled-letter exercises. All exercises except the crossword can contain reading texts, graphics, sounds, video and external links. The materials and exercises can be created in any language supported by the Unicode standard. Hot Potatoes is most frequently used in language learning but can also be suitable for any other educational subjects and disciplines.</p>	




SWOT

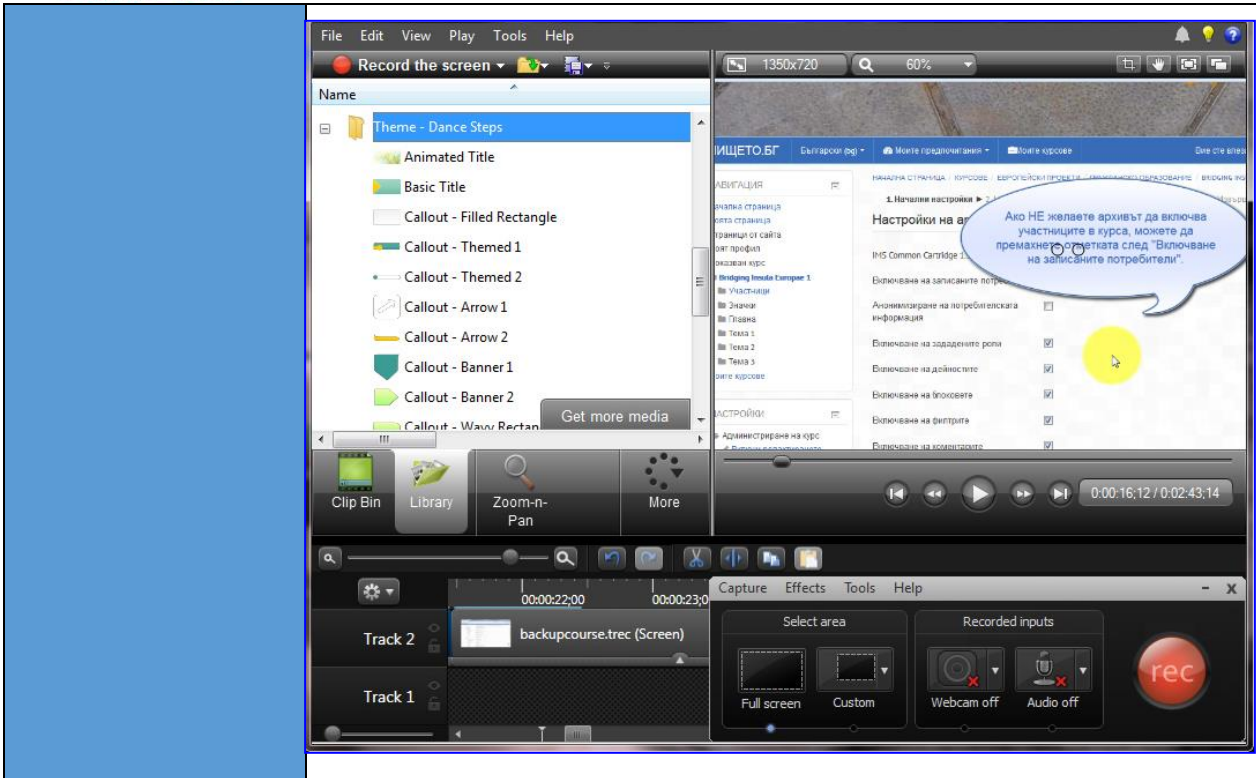
Strengths:

- A major advantage of Hot Potatoes is that the program is free and needs no special hardware requirements.
- Creating exercises is relatively easy and intuitive, and the author does not necessarily need special computer skills.
- After you have constructed a certain activity, you can save it as a separate project file, and at any later stage you can edit it or add new items.
- The learning content can be packaged by the teacher as a web page or exported in SCORM-format so that the teacher can use it in the Learning Management System.
- You can add a timer to your exercises and set a time limit for the completion of the activity.
- The program offers the possibility to randomize answers in multiple-choice questions.
- Design-wise, the author is given plenty of options to change colors and fonts.
- Hot Potatoes offers tutorials and customized source files that enable you to create new variations on already created types of exercises.
- Exercises and activities can be enriched with thorough feedback, as

	<p>well as with interactive multimedia content.</p> <ul style="list-style-type: none"> - Displaying and summarizing results is done automatically and the students may see the outcome of their performance. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - From a teacher's point of view, preparing various activities and exercises can be a very time-consuming process - There are no possibilities to prevent the students from cheating. - The exercises created with Hot Potatoes don't keep history/statistics of students achievements and marks. However, Hot Potatoes allows the teacher to specify an e-mail address to which student's scores are sent. - From a student's point of view, limited internet connectivity can cause slower performance for sound, videos and large graphics.
<p>Other comments</p>	<p>Hot Potatoes interface has been translated in multiple languages and offers sufficient documentation and help.</p>

Practice 4

Name/abbreviation	 Camtasia Studio
Type of practice	Screen recording and video editing tool; system simulation development tool
Institution/organisation/editor	TechSmith Corporation, United States
Usability	Licensed Software
Technical requirements	Camtasia is available for Microsoft Windows and Mac OS X
Web address/ link	https://www.techsmith.com/camtasia.html
Users/ target group	Educational centers, Publishing houses, teachers with advanced ICT skills and students
Brief description	<p>Camtasia is a screen-capture tool and it offers the content creators some very useful video elements. Teachers can use it to record instructions, demonstrate a procedure or use of software, record a PowerPoint presentations, edit audio/video content and integrate quizzes into videos. The screen area to be recorded can be chosen freely, and audio or other multimedia recordings may be recorded at the same time or added separately from any other source and integrated in the Camtasia Studio component of the product.</p> <p>Camtasia consists of two components: Camtasia Recorder (a tool for capturing screen audio and video) and Camtasia Editor (timeline interface for managing multiple clips). The recorder allows the content creator to add live narration while the screen-capturing is in progress. Using the editor, you can import multimedia objects of various formats into the clip library and rearrange them. The program offers numerous options to draw the user's attention such as using zoom effects, highlighting parts of the screen, etc.</p> <p>Camtasia allows import of various types of multimedia video and audio files including MP4, MP3, WMV, WMA, AVI, WAV. The Camtasia projects can be exported as a zip for further use. The created videos can finally be exported to common video formats including MPEG-2, MPEG-4, WMV, AVI, and Adobe Flash. The application supports SCORM standard for data packaging and is highly compatible with multiple Learning Management Systems.</p> <p>Camtasia is most often used by instructional designers and publishers rather than individual teachers and content creators.</p>




SWOT

Strengths:

- According to some e-learning experts, Camtasia is the best screen recording software for its audio, video and output choices.
- One of the major advantages of Camtasia is that users can record videos, edit and share them in a variety of formats.
- There is no set recording time limit (you can make your video as long as you like).
- It offers extensive assistance built into the interface.
- Voice narration and music can also be added.
- PowerPoint presentations can be imported.
- Quiz questions can be integrated into the videos.
- Camtasia supports SCORM standard.
- Camtasia's expansive sharing capabilities allow your students to watch your videos anywhere, on nearly any device. Thus your video can easily be shared on Youtube, Google Drive, Vimeo, etc.
- Predefined values for features like captions and callouts make it easy to get going.
- Zoom function allows capturing particular parts of the screen needed; and cursor movements can be highlighted to better follow the action.
- Another important advantage is the ability to save media clips

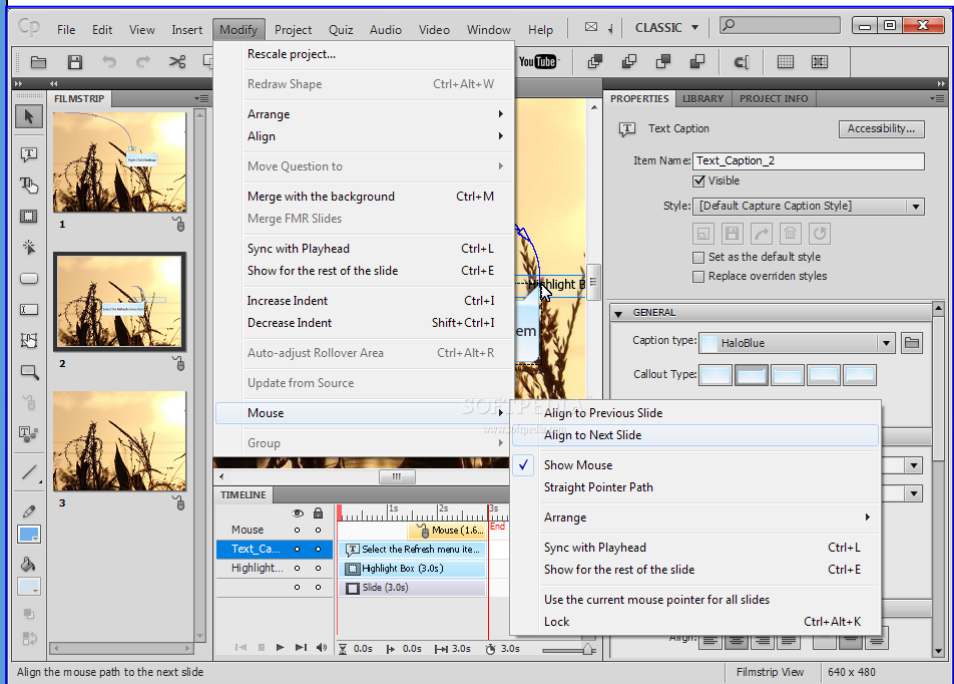
	<p>within the library tab for later use.</p> <ul style="list-style-type: none"> - A further Camtasia strength is the possibility to change the playback speed and to control the encoding options. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - The first disadvantage is that Camtasia is not free. - It requires solid ICT skills and expertise; it's fairly easy for the basic things but advanced options can be quite complicated. - Working on Camtasia projects can be time-consuming which results in the fact that actually not so many teachers use it. - According to some professional reviewers, Camtasia capabilities are not as robust as, for example, those that Adobe Captivate offers. - Camtasia interface has been translated in only three languages – English, French and German; unfortunately, there is no Bulgarian translation and this is a serious drawback.
<p>Other comments</p>	<p>Camtasia is very suitable for preparing screencasting videos and demos for software skill-focused courses.</p> <p>Camtasia provides reliable and consistent documentation and help.</p>

Practice 5

Name/abbreviation	 Adobe Captivate
Type of practice	Program that creates software demonstrations, simulations, branched scenarios, and randomized quizzes
Institution/organisation/editor	Adobe Systems Incorporated
Usability	Licensed Software
Technical requirements	Adobe Captivate is available for Microsoft Windows and Mac OS
Web address/ link	http://www.adobe.com/products/captivate.html
Users/ target group	Educational centers, Publishing houses, teachers with advanced ICT skills and students
Brief description	<p>Adobe Captivate is an authoring tool that is used for creating e-learning content such as demonstrations, simulations, branched scenarios and randomized quizzes in SWF, MP4 and HTML5 formats. It offers the possibility to import PowerPoint slides into the e-learning project, to bring in objects, animations, and multimedia and easily update the content. Its responsive design allows authors to create materials that can be viewed across multiple devices such as tablets, smart phones and laptops.</p> <p>The author can combine many projects simultaneously, customize workspace and various usability enhancements such as support for panning, text-to-speech facilities, smart shapes and hyperlinks which makes the e-learning project more captivating and enhances the user's experience. One of Adobe Captivate's significant features is its compatibility and collaboration with other Adobe software (Adobe Photoshop, Adobe Flash, etc.)</p> <p>Captivate's innovative quiz design offers various templates to allow the creation of easy-to-use quizzes with tools for comprehensive scoring of results, partial and negative scoring options, multiple choice question quizzing, and support for GIFT format and HTML5.</p> <p>Adobe Captivate has two features for audio recording and editing. The content creator can import the audio and edit it using audio editor or he can record the audio and edit it using microphone calibration option. Adobe Captivate uses objects to create interactivity. The objects can be pictures, text, video, or any other media. With Captivate you can create various interactions by customizing templates such as YouTube video streaming, Millionaire, Hangman, Jigsaw, Glossary,</p>

Accordion, etc.

Captivate supports SCORM standard (SCORM V1.2 and SCORM v2004) and is compatible with most Learning Management Systems.




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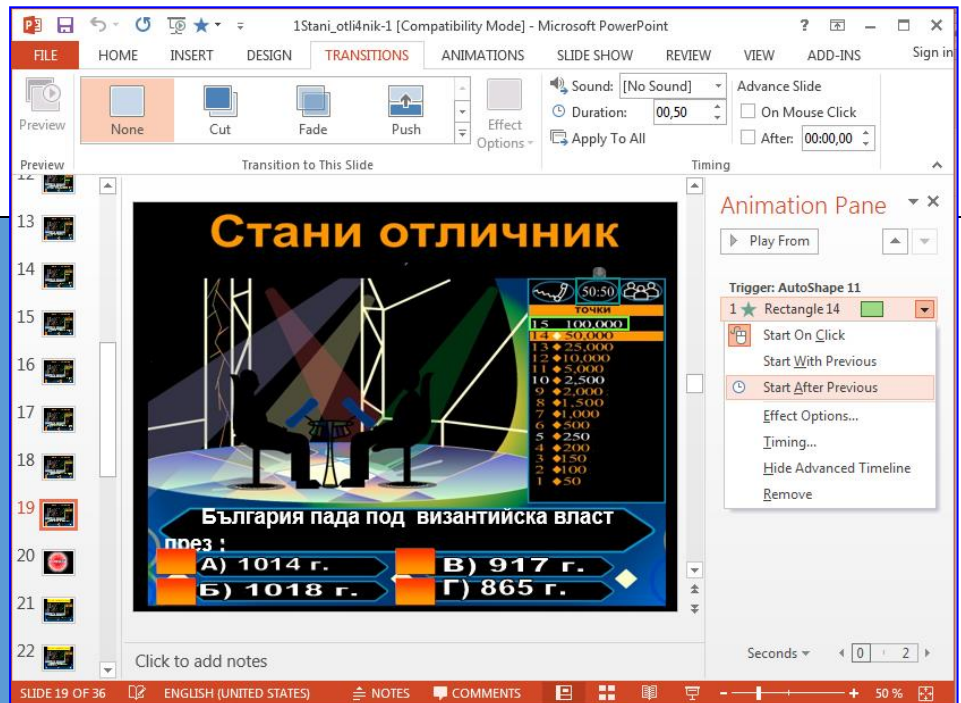
Strengths:

- Captivate's interface is very user-friendly.
- Every object can be redesigned, altered or enhanced to fit your needs.
- You can record videos from your screen.
- You can create interactive tutorials from PowerPoint presentations.
- The different types of quiz questions such as Multiple choice, True-False, etc. offer comprehensive assessment options.
- Captivate provides a multitude of interaction options – animations, callouts, highlights, effects, animated text, etc.
- The content creator can choose from attractive themes that offer various backgrounds, styles, fonts, and layouts.

	<ul style="list-style-type: none"> - It is integrated with other Adobe products. - The materials created with Adobe Captivate can be accessed on all devices such as PCs, iPads and mobiles. - An important feature of Captivate is the production of a project as a Word document which is useful to teachers and students for printouts. Captivate allows the project to be formatted as handouts, lessons or storyboard. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - The first disadvantage is that Captivate is not free. - Captivate has too many features which makes it quite complex and difficult to use. - One of Captivate's limitations is that you should keep your recordings short. The longer they are, the longer it takes to publish them, and when you want to make small changes to one area, you need to republish the entire thing. - Some features are not clearly documented. - Captivate interface has been translated in English, French, German, Japanese, Korean, Portuguese (Brazilian) and Spanish; however, there is no Bulgarian translation.
<p>Other comments</p>	<p>Adobe Captivate is frequently used by instructional designers, developers and publishers rather than teachers.</p> <p>Captivate provide sufficient documentation, tutorials, video courses and support.</p>

Practice 6

Name/abbreviation	 PowerPoint	Microsoft PowerPoint
Type of practice	PowerPoint is a presentation software developed by Microsoft. It allows creation of materials from basic slide shows to complex presentations.	
Institution/organisation/editor	Microsoft	
Usability	Licensed Software	
Technical requirements	Microsoft PowerPoint is available for Microsoft Windows and Mac OS	
Web address/ link	https://products.office.com/en-US/powerpoint	
Users/ target group	Universities, colleges, primary schools, secondary schools, educational centers, teachers and students	
Brief description	<p>PowerPoint is actually more than an application to create presentation slides. As a multimedia authoring tool it can provide content creators with a large number of other possibilities. PowerPoint allows you to integrate many different media objects such as images, animations, audio clips, movies, etc. into screens. It includes built-in drawing tools to create diagrams and design elements and allows imaginative animation authoring, as well as internal and external links and functions similar to web pages. The presentations created in PowerPoint can be set to run as standalone applications using timings for items to appear or animate. PowerPoint can function as an e-learning authoring tool by using screen objects (triggers) for other objects to perform some next action. This enables, for example, a pop-up box to appear by clicking on an image, a piece of text, or a button. PowerPoint gives the author the possibility to create different educational games (Who wants to be a millionaire, Hide and reveal game, etc.) and quizzes with multiple choice questions. PowerPoint files do not have the built-in capability to communicate (using SCORM or some other protocol) with an LMS; however, the PowerPoint presentation can be saved as a web page in HTML-format and published on the web.</p>	



SWOT

Strengths:

- The first important advantage of PowerPoint is that it is relatively quick and easy to produce and deploy.
- PowerPoint files are self-contained – they can be distributed as a single file and used on your usb drive, email, web server, etc.
- PowerPoint files can also be viewed offline.
- Content creation and maintenance is non-technical and inexpensive.
- PowerPoint features highly robust internal compression of graphics and it also provides solid internal drawing tools.
- The presentation can be set to run with automatic slide timings.
- PowerPoint offers extended features for shaping and formatting objects - shadows, mirror-effect, fill colors, etc.
- By using triggers and animation, you can create a certain, though limited, interactivity and produce not only presentations but also other learning materials such as quizzes with feedback and games.
- PowerPoint presentations can be combined with authoring tools such as Camtasia and Adobe Captivate. Thus the author can add more interactive features to the PowerPoint files and create learning simulations, games and other educational materials.
- There is an abundance of ready-made PowerPoint templates for free download and use. PowerPoint is one of the most popular applications among students and teachers worldwide; there is a large community of users who share experience and educational materials.
- PowerPoint has been translated into many different languages, including Bulgarian.


Weaknesses:

- Using only PowerPoint for e-learning purposes is not enough since

	<p>it provides the content creator with a limited basic degree of interactivity.</p> <ul style="list-style-type: none"> - PowerPoint files cannot be made into SCORM sharable content objects. In that case you will need additional applications. - By using PowerPoint and Visual Basic for Applications you can make your learning content extremely effective and engaging through a series of complicated operations. However, this requires a high level of programming skills and competence that the majority of common trainers and teachers do not usually possess. - The mass of teachers use PowerPoint primarily to make slide presentations without actually being aware of and familiar with its other options to create interactive materials.
<p>Other comments</p>	<p>Microsoft PowerPoint requires no special authoring skills or authoring tools. It can work well if you are not deploying content on an LMS and you don't require formal assessments.</p>

II. National research of good e-learning practices - GREECE

PRACTICE 1

Name/abbreviation	<p>Greek School Network (GNS)</p> 										
Type of practice	<ul style="list-style-type: none"> • E-Learning Service (http://e-learning.sch.gr) • Teleconference service (http://meeting.sch.gr) • Electronic Classroom service (http://eclass.sch.gr) • Educational Communities and Blogs (http://blogs.sch.gr) • Electronic school press (http://schoolpress.sch.gr) • Video services and live broadcasts (http://vod.sch.gr) • Communication and Cooperation Service (https://www.uc.sch.gr) 										
Institution/organisation/editor	Ministry of Education, Research and Religious Affairs (Greece)										
Usability	Free access										
Technical requirements	<p>The connection technologies used are ADSL (mainly), optical fibers and selected lines (rarely). Broadband in GSN is 98.9% and analytically:</p> <table border="0"> <tr> <td></td> <td>< 2 Mbps:</td> <td>159 (1.1%)</td> </tr> <tr> <td rowspan="3">GSN's broadband indicators</td> <td>2 - 10 Mbps:</td> <td>8.451 (60.1 %)</td> </tr> <tr> <td>10 Mbps - 100 Mbps:</td> <td>5.074 (36.1%)</td> </tr> <tr> <td>100 Mbps - 1 Gbps:</td> <td>380 (2.7%)</td> </tr> </table> <p><i>The main objective of GSN for the next five years is the further upgrade of the medium speed connections, ie. up to 20Mbps for speeds of at least 50Mbps (VDSL technology) and further school connections with optical fibers in order to meet the expanding needs of schools.</i></p> <p><u>Network Equipment</u></p> <p>GSN is the largest public network in Greece in the number of</p>		< 2 Mbps:	159 (1.1%)	GSN's broadband indicators	2 - 10 Mbps:	8.451 (60.1 %)	10 Mbps - 100 Mbps:	5.074 (36.1%)	100 Mbps - 1 Gbps:	380 (2.7%)
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	<p>users it serves. In particular, it interconnects and also connects in the Internet more than 15.000 schools, a community of 1.350.000 students and 160.000 teachers. GSN applies modern web technologies and is one of the first five school networks in the world that adopted IPv6 protocol.</p> <p>GSN owns 91 nodes in all country capitals and in the largest Greek cities. The number of nodes is expected to reach 120 by the integration of the interconnection of GSN with the Metropolitan Optical Fiber Networks of Municipalities. The technical team of CTI that is responsible for the proper functioning of the backbone network manages more than 200 network devices daily. The average network traffic of GSN to the Internet is more than 4.5 GBytes daily.</p> <p>Recently, GSN upgraded its network infrastructures of the school complex of Grava (the largest in Greece), using the most modern optical and wireless technologies to serve more than 3.500 users.</p> <p><u>Main data center Equipment</u></p> <p>The computing infrastructure of GSN is equally stronger. Through this infrastructure GSN provides its services to more than 215.000 members (schools, administrative units, teachers, students, etc.)</p> <p>The main data center of GSN is located in Athens. Three other (of smaller capacity) data centers are located in Thessaloniki (one) and in Patras (two).</p> <p>The technical team of CTI that is responsible for the uninterrupted operation of data centers manages daily more than 100 servers and network devices.</p>
Web address/ link	http://www.sch.gr/tieinaitoschmenu/eng#content
Users/ target group	<p>Schools of Primary and Secondary education, including educational units abroad, services and entities supervised by the Ministry of Culture, Education and Religious Affairs at central and regional level, service providers of lifelong learning, students, teaching staff, other educators and other entities of Ministry of Culture, Education and Religious Affairs (www.minedu.gov.gr).</p>
Brief description	<p>The Greek School Network (www.sch.gr) is the national network of the Ministry of Culture, Education and Religious Affairs. Through GSN the Ministry of Culture, Education and Religious Affairs provides the educational community with e-learning</p>

services, communication and collaboration, e-government services as well as helpdesk and user support services.

The main services of GSN are:

Broadband Connection: *In all public schools and administrative units free broadband connection is provided. The connection charges of public education units with GSN and Internet burdens the State Budget. The units abroad do not receive this service.*

Portal: The portal of GSN <http://www.sch.gr> operates as an informational point for actions related to education and as a central point of access to GSN services. The main features of the portal are:

- News, announcements and events related to the educational community
- Instructions and manuals for services provided by the GSNP
- Personal websites of the members of GSN and other educational websites
- Access to the personal admin panel for each member of GSN
- Connection with other services of GSN

Central user authentication service: *This is the most popular service of GSN and aims to the handling of users' emails i.e. schools, teachers, administrative units, administrators and students. Communication is secure and a series of modern features is provided such as viruses and spam protection etc.*

Email Lists: *The email listing service is designed for the easy handling of messages and documents to large number of users. This service is widely used by the Ministry and its regional structures for the handling of formal correspondence at schools.*

Web Hosting: *The Web hosting service gives schools, administrative units and teachers the opportunity to create and easily maintain their website.*

Internet Safety: For GSN the safe access of students to the Internet and their protection against inappropriate content is a fundamental principle. Since 1999, GSN operates a content control service on the web and applies a secure content policy, in line with the international practices and legal requirements. GSN supports initiatives of Ministry of Culture, Education and Religious Affairs such as informing schools through online meetings from the Computer Crime Unit of the Greek Police. Specifically GSN provides teleconferencing and live broadcasting

services for the implementation of online meetings and until today more than 10.000 schools have actively participated. Furthermore GSN (CTI) functions since 2006 the informative hub “Internet Safety” (<http://internet-safety.sch.gr>) through which reliable and targeted information, support and quality educational material for students and teachers is provided. Since 2013 GSN (CTI) participates as a national coordinator in eSafety Label action of the European Schoolnet. Through this action Greek schools can attain a special certification which aims to the support of schools in order to provide a safer online environment for teachers and students. Quantitative indicators of eSafety Label bring our country in the first place in Europe. A complementary initiative of GSN is the action “Call an expert for Safe Internet” (<http://internet-safety.sch.gr/call-an-expert>), which offers schools the opportunity to call a certified instructor in safe internet issues to organize an event to inform and educate the school community. The body of experts consists of specially trained and certified teachers and education officials.

Teleconference service: The teleconference service (<http://meeting.sch.gr>) provides to the certified members of GSN (teachers, schools and administrative units) the ability to create conference calls. The administrator interface is fully localized, supports full audiovisual communication and allows presentation view, file and application sharing amongst participants. This service is in use in September 2014 and has been used in more than 10.000 schools in 36 teleconferences of Electronic Crime.

E-Learning Service: The e-learning service (<http://e-learning.sch.gr>) of GSN is based on the world’s leading Learning Management System Moodle. It provides a convenient interface through the internet which promotes participative and collaborative learning. It supports distinct user roles and provides secure and personalized access through its integration with GSN directory service. This service has been certified according to SCORM LMS-RTE STANDAR and it is completed with the teleconferencing and synchronous e-learning system Big Blue Button.

Electronic Classroom service: The Electronic Classroom service (<http://eclass.sch.gr>) is addressed to teachers and students of primary and secondary education and enriches the course that takes place daily in the classroom with modern educational ICT tools. The teacher can create online courses and fully interact with his/hers students. This service can also be used for training, collaboration etc. between teachers.

Educational Communities and Blogs: Blogs and social

networking are second generation digital tools (Web 2.0), which are used in the educational process because of their interactive and collaborative offering. The GSN provides the service of Educational communities and blogs (<http://blogs.sch.gr>) through the open source platform WordPress. A key feature is that the GSN service provides equivalent functionality to those of public social networks (Facebook, twitter etc.) but in a completely secure environment where all members are certified.

Electronic school press: The Electronic school press service (<http://schoolpress.sch.gr>) based on the open source platform WordPress and addressed to teachers and students of Primary and Secondary education and enriches the classical teaching process with group collaboration tools and with the publication of a group's activity. Students are encouraged to express themselves, develop and evolve their skills in writing.

Video services and live broadcasts: The video service (<http://vod.sch.gr>) provides the ability to search, post and play video with modern tools. It allows users who post material, to enter metadata while offering a personalized service to all certified members of GSN. High definition videos are supported from different devices. This service is offered to schools and teachers who can also create their own radio and tv channels and their own groups in which video material is distributed only amongst its members. An important feature of the service is the live broadcasting (<http://vod.sch.gr/live>) which regards to the live broadcasting to the school community as well as online events organized by the Ministry of education, supervised entities or schools. The service is very popular and more than 90 events broadcasted live during the latest three years.

Communication and Cooperation Service: The communication and cooperation service (<https://www.uc.sch.gr>) offers schools and teachers with calling options, either with voice or video, telephone conference between multiple users, sending voice messages (voice mail), receiving fax with automatic forwarding to email, instant messaging and marking presence feature. The major benefits of using this service are:


- Cutting down on resources, as communication between users is free.
- Facilitating communication and collaboration between users.
- Creating conditions for the utilization of services as a modern educational and collaboration tool between students and teachers.
- Upgrading telephone support services provided to GSN (helpdesk).

	<p>User Support (Help-Desk): for the immediate resolution of any technical problem encountered in connection, provided services and their use. Provided via telephone: 801.11.801.81 (9.00 - 17.00 daily, except holidays), via email / fax and through a change management system http://www.sch.gr/helpdesk. The user support service is provided by all partners and a total of about 120 engineers and technicians are dedicated to it nationwide. User support service carries out a vast number of tickets regarding requests for technical support in school's ICT infrastructures and requests for GSN services submitted by schools.</p>
<p>SWOT</p>	<p>Strengths</p> <ul style="list-style-type: none"> • GSN is the official and exclusive network and services provider for the units (schools/administrative units) of Public Primary and Secondary Education. • GSN also certifies all members of school community (schools, administrative units, teachers, students and administrative staff). The service of safe user authentication is being utilized by the Ministry of Culture, Education and Religious Affairs and regulated entities for the provision of specialized electronic services. • The GSN as a public network is working closely and harmoniously with the other two national networks GRNET (www.grnet.gr) and SYZEFXIS (www.syzefxis.gov.gr) and plans the next day (in terms of access) which will be the transition of school's circuits to the, under construction, Public Sector Network. • Since 2011, and in accordance with article 32 of N3966/2011, the administration and management of GSN is performed by CTI. For this purpose CTI established the Greek School Network and Networking Technologies Directorate (http://nts.cti.gr), which cooperates with Universities and Technical colleges with specialized networking groups. These entities both support the school/administrative units of their region and some of them develop and support specific web and online services. <p>Weaknesses</p>
<p>Other comments</p>	<p>Interconnection with European Actions and International Awards.</p> <p>The GSN has received the following international references and distinctions.</p> <ul style="list-style-type: none"> • Greek school network increasingly turning to open source

(2014) <https://joinup.ec.europa.eu/news/greek-school-network-increasingly-turning-open-source>

- Greek school network adopt IPv6 (2007)
http://cordis.europa.eu/result/brief/rcn/3467_en.html
- Networking students and teachers in Greece (2004)
http://ec.europa.eu/employment_social/esf/docs/el2_1_en.pdf

PRACTICE 2

Name/abbreviation	Photodentro LOR 
Type of practice	Repository with explorations and inquiry-oriented activities, dynamic simulations and experiments, educational games, presentations, short-length educational videos, interactive exercises, interactive maps as well as simple learning assets.
Institution/organisation/editor	Ministry of Education, Research and Religious Affairs (Greece)
Usability	Free access
Technical requirements	Ipad, Tablet, Desktop PC, Notebook, Netbook
Web address/ link	http://photodentro.edu.gr/lor/?locale=en
Users/ target group	Primary schools, secondary school, educational centers, teachers and students, parents, public
Brief description	<p>Photodentro LOR is the Greek National Learning Object Repository (LOR) for primary and secondary education. It has been designed and developed by CTI in the context of the “Digital School” large scale program of the Greek Ministry of Education (2010-2015) and it constitutes a core part of the Ministry’s digital infrastructure for educational content for schools.</p> <p>It supports browsing, free text search, and faceted search, allowing users to narrow search results by applying multiple filters, such as learning resources type, educational context, etc.</p> <p>It currently hosts more than 4,000 learning objects, organized in thematic or other collections. Most of them have been developed by around 120 qualified teachers, in ten domain-specific workgroups, in the process of enriching Greek textbooks with digital interactive resources. Each group operated under the supervision of a coordinator, an academic with significant domain and pedagogical expertise, to ensure quality. In an attempt to make the most of previous publicly funded projects, the next population phase of Photodentro LOR focuses on open learning objects that can be extracted from existing educational software and learning scenarios developed during the last decade.</p>

SWOT

Strengths

- Almost all learning objects are “click-and-play”, i.e. they can be directly reproduced in web browsers.
- All learning resources are freely available to everyone under the Creative Commons’ Attribution-NonCommercial-ShareAlike license.
- Photodentro LOR (photodentro.edu.gr/lor) is the first repository in the Photodentro educational repository ecosystem, which also includes the Photodentro EduVideo (photodentro.edu.gr/video), hosting short-length educational videos, and the Photodentro e-yliko, supporting user-generated content (photodentro.edu.gr/ugc).
- Photodentro will also be linked to the Digital Educational Platform “e-me”, thus facilitating teachers and pupils in utilizing learning resources and incorporating them within learning scenarios and courses.


Weaknesses

Other comments

Photodentro LOR name has been carefully selected to convey the message of what Photodentro is: a repository that contains “knowledge”; it is alive and grows like trees (in contrary to archives); and it is Greek. The word “Photodentro” means “Light Tree”, and it is taken from the title of the poetry collection “The Light Tree and the Fourteenth Beauty” (1971) of the greek Nobel prize winner Odysseas Elytis.



PRACTICE 3

Name/abbreviation	
Type of practice	Rich media and learning platform
Institution/organisation/editor	Greek Academic Network (GUnet)
Usability	Free access
Technical requirements	<p>Hardware Recommendations</p> <p>OpenDelos is written in Java, it will therefore run on any Operating System (Linux, Windows, Mac OSX). OpenDelos is built on top of free, open-source tools, such as the Apache Web server, the Tomcat Servlet engine, Spring Framework and the eXistDB native XML database system. For your convenience, we package the necessary JDBC and other drivers and libraries together with OpenDelos. This set of tools should run on any UNIX-type OS, such as Linux, HP/UX, or Solaris, and you can substitute other libraries if you need to run on another platform. There are a few general recommendations for hardware architectures. In a production setting where OpenDelos is actively used in public, OpenDelos requires a reasonably good server (see below) and a decent amount of memory and disk storage.</p> <p>For such production usage, following requirements are meant as a guideline:</p> <p>Recommended minimum production system requirements</p> <ul style="list-style-type: none"> • 4 GB of Random Access Memory (RAM) <ul style="list-style-type: none"> ○ 3GB for Tomcat (e.g. "TOMCAT_OPTS=-server -Xms3096M -Xmx3096M -XX:MaxPermSize=128M -Dfile.encoding=UTF-8") ○ 1GB for Database (eXistDB). • Decent amount of Storage (or roughly enough storage for all the files you wish to store in OpenDelos) <p>An empty installation of OpenDelos will effectively require less than 500MB of storage. The storage estimates are very rough. The actual amount of storage you will need depends on the size of the files you plan to store in OpenDelos. Files are not compressed in any way, so at a bare minimum you need enough space to store all of your files, plus some extra space for database storage and logfiles. You also will need to be prepared to add additional storage space as you add more content to OpenDelos.</p>

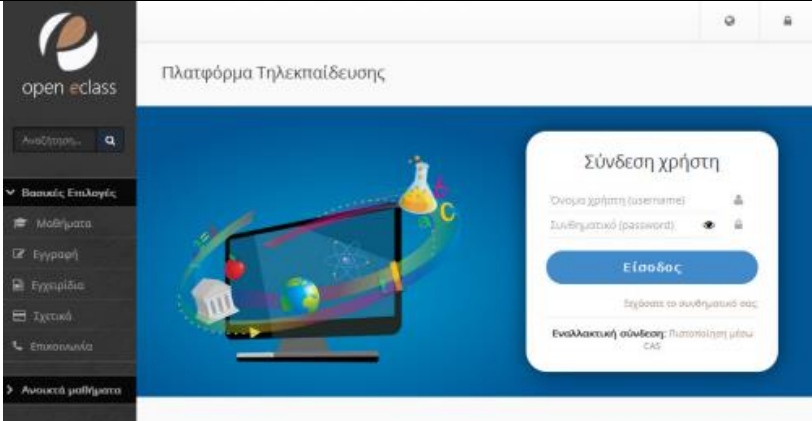
	<p>Staging Server</p> <p>Once you are running OpenDelos in a production environment, it is highly recommended to run a separate, second instance of OpenDelos on a test or staging server. Any OpenDelos upgrades, customizations or other modifications can first be evaluated on this staging server before you move to production. If the actual testing is carried out by only a few people, your staging server will not experience the same levels of load as your production server. Therefore, you can bring down the system requirements for your staging server, even below the above minimum requirements.</p> <p>To make sure that your staging environment is a realistic simulation of your production server, it is recommended to mirror as much settings or configuration as possible. Needless to say, a staging server on windows will not provide reliable testing outcomes if your actual production machine is running linux and vice versa.</p> <p>To simulate higher levels of load on your staging server, you can use free tools like JMeter.</p> <p>Software Requirements</p> <p>Ubuntu 14.04 LTS Desktop or Server</p> <ul style="list-style-type: none"> • Download at: http://www.ubuntu.com/download/ <p>Apache Tomcat Version 7</p> <ul style="list-style-type: none"> • Included in OS packages • Oracle Java 7 <p>ffmpeg</p> <ul style="list-style-type: none"> • Download at ... see instructions <p>H264 Streaming Module for Apache2</p> <ul style="list-style-type: none"> • Download at... see instructions <p>eXist-db Open Source Native XML Database Version 2.1:</p> <ul style="list-style-type: none"> • Download from: http://exist-db.org/exist/apps/homepage/index.html
Web address/ link	http://opendelos.org/?page_id=21462&lang=en

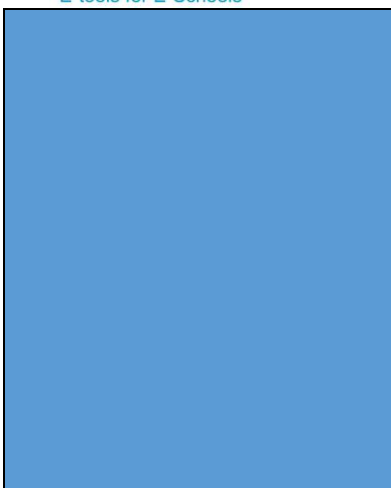
Users/ target group	Teachers and students of Greek universities and technological institutes
Brief description	<p>OpenDelos serves as a tool for the management of educational videos produced under the framework of the “Central Repository of Greek Open Courses” initiative.</p> <p>It implements the relevant tools for supporting the following activities:</p> <ul style="list-style-type: none"> • Video lecture production • Video and presentation processing • Vich-player play back
SWOT	<p>Strengths:</p> <ol style="list-style-type: none"> 1. The major functionalities of the platform are: <ul style="list-style-type: none"> • Scheduled recording of video lectures by remote management of installed cameras • Management and processing of produced video material • Syncing of video to presentation slides • Publishing of synced video lectures through a rich player on the web 2. The three main scenarios that are supported by the platform for lecture production are: <ul style="list-style-type: none"> • In-class installed, fixed camera (IP camera recording) • Camera crew with mobile equipment (mobile recording) • Sound recording of lecture (podcasting) 3. After initial recording, the material can be processed with online tools: <ul style="list-style-type: none"> • Video editor for trim and cut operations • video sync editor for sectioning video and associating to slides 4. Finally, publishing of material through: <ul style="list-style-type: none"> • Central portal for search of aggregated and indexed lecture metadata • Rich player for video lecture reproduction <p>The published lectures on OpenDelos are closely tied to the respective course material hosted on Open eClass, the associated learning management system. The student can leverage the full material available for the course, both recorded lectures and LMS hosted activities. The two platforms provide live feeds of course metadata to the national aggregator portal, which offers a search interface at a national level for all indexed courses of participating institutions.</p> <p>Weakness:</p> <p>The OpenDelos platform is still under development (http://docs.opendelos.org/display/ds/Welcome+to+OpenDelos). The first beta version is available to all academic institutions</p>

	participating in the Greek Open Courses initiative.
Other comments	The goal and ambition of the “ Central Repository of Greek Open Courses ” project is to enhance and further facilitate the exploitation of disruptive Internet technologies by institutes and faculty members in order to offer high quality, based on international standards and practice, educational material which could upgrade the teaching procedure, highlight the social role of educational institutes and promote their teaching output at an international level.

PRACTICE 4

Name/abbreviation	 open eclass Open eClass platform
Type of practice	E-learning platform
Institution/organisation/editor	Greek Academic Network (GUnet)
Usability	Free access
Technical requirements	<p>The Asynchronous Open eClass 3.2 eLearning platform has been tested and operates well in:</p> <ul style="list-style-type: none"> • Ms Windows environments (Windows 2000, Windows XP, Windows 2003, Windows Vista, Windows 7, Windows 2008). • MacOS X. • Various Linux distributions (e.g. RedHat, CentOS, Debian, Ubuntu, OpenSuse etc) • Other UNIX environments (e.g. Solaris). <p>Current version of Open eClass DOESN'T include database administration tool phpMyAdmin. If you wish, you can copy folder (path tou eclass)/modules/admin/mysql/ in a temporary folder (e.g. /tmp). After upgrade has completed you can restore it to its previous location. Otherwise you can download latest version from here. Installation instructions are provided here</p>
Web address/ link	http://demo.openeclass.org/ http://www.openeclass.org/en/distribution/
Users/ target group	Educational institutions, organizations, institutes and enterprises, teachers and students
Brief description	<p>Open eClass (ver.3.3) The Open eClass platform is a complete Course Management System, used to store and present educational materials. It is the solution offered by the Greek Academic Network (GUnet) to support asynchronous elearning services. Its goal is the incorporation and constructive use of the Internet and web technologies in the teaching and learning process.</p>

	 <p>The Open eClass platform has been designed to either provide an alternative way of teaching and learning process. Teachers are able to quickly organize practical on-line courses, making use of existing educational materials: texts, documents, presentations, pictures, video, exercises and so on. Students themselves can access provided materials via an alternative channel.</p> <p>The Open eClass platform is available as open source software. Its design principles include ease of use by end users without specialized technical skills, multilingual support, adaptability to current and future demands, and simple software upgrade and extension. The service is accessible via any web browser.</p>
<p>SWOT</p>	<p>Strengths:</p> <ul style="list-style-type: none"> • It is distributed for free to educational institutions, organizations, institutes and enterprises. • Its source code is freely available and can be customized according to specific needs and requirements. • It adapts to different hardware devices, from conventional desktops and laptops to tablets and smartphones. Open eClass mobile apps are also available. • It is used by the majority of universities and technological institutes in Greece. • It allows the user to organize, store and distribute educational materials, including multimedia content. • Communication, information and collaboration tools are provided through the platform. <p>Through the platform one is able to:</p> <ul style="list-style-type: none"> • develop and manage unlimited online courses • create self-assessment quizzes and online tests • create a sequence of steps with independent learning objects • view statistics, track learners' participation and progress, create surveys and reports



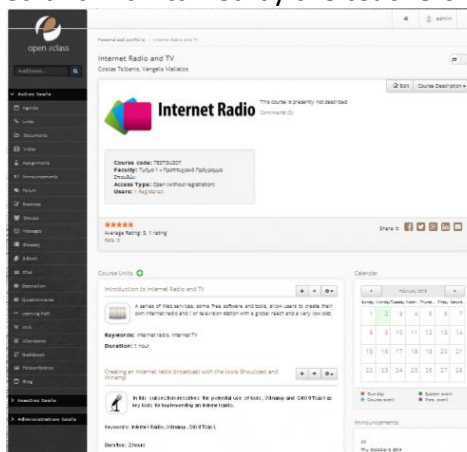
- organize, store and distribute educational resources
- create, manage and grade online assignments
- manage users and form groups to support collaborative learning
- use learning objects authored in all standard course authoring tools
- add, organize, store and embed multimedia files
- upload, manage and present eBooks in HTML format
- choose from a variety of communication tools (teleconference, chat, forum, messages)
- safeguard the content of the course in case of accidental deletion or corruption



Other comments

The distribution of the first version (1.0) of the platform was launched in 2003. Ever since many new versions of the platform have been designed and developed as an offer to the educational and academic society to enhance the teaching and learning process. Today Open eClass constitutes a self-contained platform that bears little resemblance to its original source. Indeed, the Open eClass 3.0 was launched in April 2015 and it supports the open digital courses, in combination with the Open Delos platform and the National Repository

The eCourse is the core part of the Open eClass platform. Each eCourse is an autonomous entity which integrates a number of learning tools. More specifically, each eCourse consists of the following learning tools - components which can be enabled and maintained by the teachers:





Course Home

1. **Agenda**, presents crucial course events in time order (lectures, meetings, etc)
2. **Documents**, educational materials available to students (documents, presentations, images ,etc)

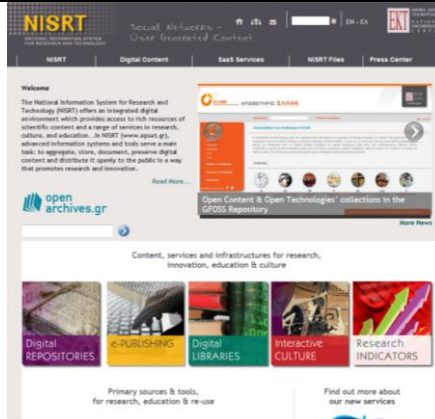
3. **Announcements**, concerning the course; they can be optionally e-mailed to students
4. **Forums**, where students can participate in conversation groups and exchange opinions on various aspects of the course
5. **Groups**, open or closed, consist of users registered to the course (students and teachers)
6. **Links**, on the web to resources relevant to the aspects of the course
7. **Student Assignments**, where students can submit work done in response to assignments set forward by the teacher
8. **Self-evaluation Exercises**, created by the teacher, allowing students to practice and test their knowledge
9. **Course Description**, presents information about course goals, structure, teachers in charge, etc.
10. **Glossary**, space for adding and managing the terms contained in the course.
11. **E-Book**, a module for uploading and presenting electronic books in HTML format
12. **Multimedia**, where recorded lectures or other multimedia files can be stored and presented to students, either as multimedia files or as external links to multimedia recourses
13. **Learning Path** allows teachers to organize their educational material and students to follow a sequence of learning activity steps (SCORM)
14. **Wiki**, where course participants collaborate on documents, allowing everyone to edit document pages while maintaining full history of changes
15. **Teleconference**, combining real-time on-line conversations, and message exchange
16. **Questionnaires**, which can be used for polls and learning profile surveys
17. **Drop Box**, is a file and messaging exchange area for students and teachers
18. **Course Administration Tools**, allowing teachers to configure course information (title, keywords, etc.), control eCourse access settings, renew or delete the eCourse, manage registered users, view usage statistics and activate / deactivate eCourse learning tools.
Course units offer a flexible way to organize educational material that is stored in the course learning modules in an articulate structure.

PRACTICE 5

Name/abbreviation	  <p>Εθνικό Πληροφοριακό Σύστημα Έρευνας και Τεχνολογίας (ΕΠΣΕΤ) National Information System for Research and Technology (NISRT)</p>
Type of practice	<p>Digital Library Services: National Union Catalog of Serials of the Greek Scientific Libraries, personalized scientific information services, electronic ordering of scientific content etc.</p> <p>Social Networking and User Generated Content Services addressing modern educational and informational needs.</p> <p>E Research tools, Application and Services to increase the effectiveness of research activity and educational procedure.</p> <p>Digital Repositories Services in culture and in science: providing open content for the research, academic and business world.</p> <p>E-publishing Tools and Services: e journals, e-books, conference proceedings and a range of digital material addressed to research, academic and business agents.</p> <p>Services for Monitoring, Mapping and Evaluating Research Activity: metrics and indicators for Greek research activity, services for the documentation of scientific output in humanities and social sciences, Current Research Information Systems (CRIS)</p> <p>Horizontal Digital Services: such as user's Helpdesk, services for mobile users, etc.</p>
Institution/ organisation/editor	<p>National Documentation Centre (EKT) http://www.ekt.gr/en/index.html</p>
Usability	<p>Free access</p>
Technical requirements	<p>Policies for research e-Infrastructures are implemented through the Operational Program "Digital Convergence" which also funds NISRT. In a constantly changing socio-economic environment, NIRST meets the ever-expanding requirements and technological challenges (e.g. broadband, technological convergence, modern information systems), adheres to international standards of performance and develops integrated actions on key issues in research, education and innovation.</p>

Web address/ link	www.epset.gr
Users/ target group	Academic and research community, organizations and bodies in education, research and technology, citizens and various user groups
Brief description	<p>The National Information System for Research and Technology (NIRST) offers an integrated digital environment which provides access to rich databases of scientific content and a range of services to the country's scientific, educational and business community.</p> <p>In the heart of NIRST's evolution lies the realization that open access to digital information is vital for modern societies, a source of inspiration and creativity and a building block for societal and economic development. In NIRST advanced information systems and tools serve a main task: to aggregate, store, document and manage digital content and distribute it openly to the public in a way that promotes research and innovation.</p>
SWOT	<p>Strengths</p> <p>Today, free access to reliable certified digital content has become an increasingly necessary condition for collective progress. NIRST addresses critical aspects related to digital content, its long term preservation through sophisticated information systems, its distribution as a public good and its exploitation for the benefit of the research world. Recently, attention has been focused on issues related to the exploitation of research results, the production of user generated content and the promotion of scientific networking. With an aim to develop and expand digital content available to Greek citizens, NIRST empowers users to create and add digital content themselves, use it and reuse it for the benefit of research and education. Following international trends and adhering to the values that support open access to knowledge, infrastructures and information systems in NIRST, are continuously evolving in terms of content, operationability and technological affordances. As a result, NIRST aims to become a portal (e-Infrastructure) of national scale which grants access in valuable digital content for the benefit of education, research, and culture.</p> <p>Weaknesses</p>

Other comments




PRACTICE 6

Name/abbreviation	 Natural Europe educational collections
Type of practice	<ul style="list-style-type: none"> • Natural Europe Pathway Authoring Tool (Open source instrument to build educational environment) • Repository of Educational pathways and resources
Institution/ organisation/editor	Greek Research & Technology Network
Usability	Free access
Technical requirements	Ipad, Tablet, Desktop PC, Notebook, Netbook
Web address/ link	http://www.natural-europe.eu/educational/
Users/ target group	Schools of Primary and Secondary education, educational centres, teachers and students, parents, public
Brief description	<p>The educational pathways were produced in the framework of the project Natural Europe (www.natural-europe.eu), using Natural History digital content and cultural heritage for Education.</p> <p>The educational pathways or routes or scenarios approach various topics in an integrated and interdisciplinary way.</p> <p>The project Natural Europe has involved six (6) Natural History Museums of Europe. In its framework the following products have been developed:</p> <ul style="list-style-type: none"> • A digital library of Natural History with rich photographic material from the above Museums, available to the educational community. Teachers have the opportunity to use material in order to enrich their educational paths. • Various educational paths that are developed from the above NHM and which are also available to the educational community. All the above are to be offered through the websites of participating NHM and science centres. <p>The design of educational pathways is based on innovative pedagogical approaches and methodologies.</p>

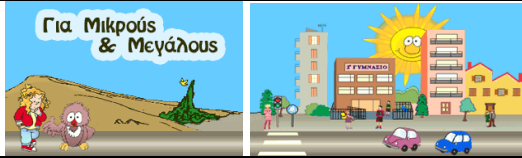


	<p>All activities provided are based on Collaborative and Creative Learning. Learning through educational paths is the result of a learner-centered learning process, while the teacher has the role of facilitator.</p>
<p>SWOT</p>	<p>Strengths</p> <ul style="list-style-type: none"> • The website is particularly intricate, friendly and attractive to visitors. • These integrated lesson plans with detailed instructions for their application brought to the center of learning the student and the teacher in the role of facilitator. The exploratory manner of learning allows students to think, to reflect, to inform and to form their own opinion on the matter. <p>Weaknesses</p> <ul style="list-style-type: none"> • Navigation is not really functional. As you go down to the page to have a general idea, is not easy to pass to the next page. You should be back again at the top of the page and choose the next one. It is not clear in which page you are. • It makes no particular reference to children with disabilities or dyslexic children
<p>Other comments</p>	

PRACTICE 7

Name/abbreviation	
Type of practice	Model of web awareness campaigns, web tools, cartoons, web based edu-games
Institution/ organisation/editor	Foundation of the Hellenic World
Usability	Free access
Technical requirements	Ipad, Tablet, Desktop PC, Notebook, Netbook
Web address/ link	http://www.fhw.gr/imeakia/index.html
Users/ target group	Schools of Primary and Secondary education, educational centres, teachers and students, parents, public
Brief description	<p>The Imeakia is a childhood node FHW which consists of games, newspaper, comics, etc. In the category of games there is the option “Dance of the land” referring to earthquakes. The children choose various places like the school hall, their room, the street and so on. They also choose the right answer to the question “what we do in the case of earthquake?” according to their opinion. The next game refers on what we should have at home in case of an earthquake. Children have to choose among several objects the most important and necessary for them in order to face difficulties and accidents in case of an earthquake.</p> <p>And finally, children learn basic concepts of the earthquake such as earthquake focus, epicenter, fault, seismic waves and earthquake magnitude and watch the related images.</p>
SWOT	<p>Strengths</p> <ul style="list-style-type: none"> • Colourful and stylish website, friendly and very attractive for children with rich educational content and creative educational interactive games. • Well-designed interactive web page, with easily understandable content, attractive to children. Easy and simple to use. The children have a lot of choices like games, newspaper, commix. <p>Weaknesses</p> <ul style="list-style-type: none"> • It makes no particular reference to children with

	<p>disabilities or dyslexic children.</p>
<p>Other comments</p>	

PRACTICE 8

Name/abbreviation	
Type of practice	Cartoons, animations and video game with interactive educational content
Institution/ organisation/editor	 Earthquake Planning and Protection Organization (EPPO)
Usability	Free access
Technical requirements	Ipad, Tablet, Desktop PC, Notebook, Netbook
Web address/ link	http://kids.oasp.gr/
Users/ target group	Schools of Primary and Secondary education, educational centres, teachers and students, parents, public
Brief description	<p>It is a kids' part in the web-site of the Earthquake Planning and Protection Organization (EPPO), where students could find Information about the correct behavior in case of disasters and the rules of preventions, as well as scientific information about the disaster for children trough games and fun.</p> 
SWOT	Strengths <ul style="list-style-type: none"> • The presenting information is attractive and fun with a big variety of games (puzzles, crosswords, etc). • The educational material consists of a lot of attractive and vivid games with interesting dialogues and animation. • Content is corrected, comprehensible and

	<p>understandable and the language is simple. The games complement knowledge in a constructive way.</p> <p>Weaknesses</p> <ul style="list-style-type: none"> • In the video presentation (eg Earth and earthquakes) there is no information about the purpose and the content of the video. The provided help let the user know whether the given answer is correct or not, but there is no information that could help him-in the case of a wrong answer-to go on and have another new chance. • In the video presentation (eg earthquakes and Earth) there are no control buttons during playback so that the user can skip some video if not interested. In section 'Greece and earthquakes' there are no information in text form. • The aim of each activity is not given, nor the expected results. The games are 'drill and practice' that do not allow self-motivated and active learning in children • It makes no particular reference to children with disabilities or dyslexic children.
<p>Other comments</p>	

Findings and conclusions

Describe the context, list any findings, tendencies and patterns in your country. Provide any additional information that may be useful for the final report and for the EFES project further implementation.

The best practices have been collected in relation to web and learning tools, repositories and e-learning platforms addressed to the Greek educational community.

In general, tools are well structured and presented. The topics are well described and their scientific adequacy is at high level. The pedagogical approach and quality are sufficient for the target groups of users, the design of websites is friendly and useable and the educational units are attractive and well presented. In addition, some of the tools have received awarding from EU authorities indicating the high quality and effectiveness of the tools.

It may be concluded that the goal of educational units to enhance the educational community's cultural competency has been achieved. When learning is applied, learners' new skills and knowledge have been developed, and new abilities have been reinforced. Additionally these tools are an effective way of ensuring learners to follow-up their training with relevant actions to apply, improve, develop and reinforce learning.


List of best practices in Greece

	Title	Type of practice	Entity	Target group
1	Greek School Network (GNS)	<i>E-Learning Service</i> <i>Teleconference service</i> <i>Electronic Classroom service</i> <i>Educational Communities and Blogs</i> <i>Electronic school press</i> <i>Video services and live</i> <i>Communication and Cooperation Service</i>	Ministry of Education, Research and Religious Affairs (Greece)	Schools of Primary and Secondary education, including educational units abroad, services and entities supervised by the Ministry of Culture, Education and Religious Affairs at central and regional level, service providers of lifelong learning, students, teaching staff, other educators and other entities of Ministry of Culture, Education and Religious Affairs
2	Photodentro LOR	Repository with explorations and inquiry-oriented activities, dynamic simulations and	Ministry of Education, Research and	Schools of Primary and Secondary education, educational centres, teachers and students, parents,

		experiments, educational games, presentations, short-length educational videos, interactive exercises, interactive maps as well as simple learning assets	Religious Affairs (Greece)	public
3	OpenDelos Rich media and learning platform	Rich media and learning platform	Greek Academic Network (GUnet)	Teachers and students of Greek universities and technological institutes
4	Open eClass platform	E-learning platform	Greek Academic Network (GUnet)	Educational institutions, organizations, institutes and enterprises, teachers and students
5	National Information System for Research and Technology (NISRT)	Digital Library Services Social Networking and User Generated Content E Research tools, Application and Services Digital Repositories Services E-publishing Tools and Services Services for Monitoring, Mapping and Evaluating Research Activity Horizontal Digital Services	National Documentation Centre (EKT)	Academic and research community, organizations and bodies in education, research and technology, citizens and various user groups
6	Natural Europe educational collections	Natural Europe Pathway Authoring Tool (Open source instrument to build educational environment), Repository of Educational pathways and resources	Greek Research & Technology Network	Schools of Primary and Secondary education, educational centres, teachers and students, parents, public
7	Ιμεακία (Imeakia)	Model of web awareness campaigns, web tools, cartoons, web based edu-games	Foundation of the Hellenic World	Schools of Primary and Secondary education, educational centres, teachers and students, parents, public
8	Για μικρούς και μεγάλους (Gia mikrous kai megalous)	Cartoons, animations and video game with interactive educational content	Earthquake Planning and Protection Organization (EPPO)	Schools of Primary and Secondary education, educational centres, teachers and students, parents, public

III. National research of good e-learning practices – ITALY

Practice 1

Name/abbreviation	 ScuolaChannel (ChannelSchool)
Type of practice	Open Source Platform and tools to make online education fun for kids. The education is related to the fight against the food waste in order to implement a sustainable consumption
Institution/organisation/editor	Sponsored by the Auchan Group
Usability	<ul style="list-style-type: none"> • Multi-device (laptop, LIM, tablet, etc.) • Multi-platform (Windows, Mac OS, Linux, Android, IOS, etc.)
Technical requirements	The Platform is available for GNU/Linux, Microsoft Windows and Mac OS X, Android
Web address/ link	http://www.scuolachannel.it/projects/home/sprecarenonvale
Users/ target group	From kindergartens to Secondary school. The target groups are students but also teachers and parents
Brief description	<p>This Edutainment Platform aims at involving children and the schools system for building a new awareness among the younger generation on food and sustainability.</p> <p>The digital platform Channel School, launched in 2014, was addressed to primary and secondary schools in its first edition, and now it contains also educational resources for kindergartens and secondary level schools.</p> <p>It has a doubly innovative approach: in terms of content, because it allows to introduce students to the concept of waste in all its forms, proposing it as a concrete opportunity to seize the opportunity to use the most of every resource; in terms of methodology as it offers a digital mode and multimedia from 2.0 School to develop the educational contents mainly through games and funny on-line activities that put the users "in the situation" accompanying them to reflect on the values and implications that a</p>

consumer choice involves.

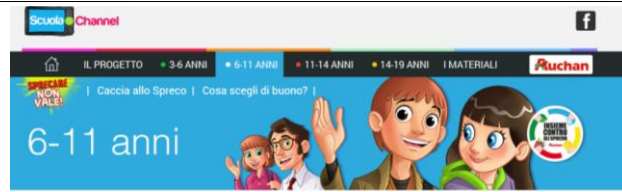
Through interactive games and ideas the different aspects of waste (energy, time, money, food waste, talents and personal potential, human and social development) are "discovered" and then be investigated to understand the dynamics and impact on the environment.

PROSCHOOL RESOURCES



- Guide for teachers and parents
- Riddles fun for children up to 6 years (1,2,3 Yum!), to develop the perception of food good playing of flavors, shapes and colors.
- Rhymes (Four Seasons delicious & It is feeding time). An engaging way to educate to proper nutrition, encourage curiosity and introduce concepts, actions and feelings related to the good foods.
- Games Engines designed to give guidance to educators in the conduct of activities in the classroom in which imagination and motor skills can help children to know the pleasure of grow well

RESOURCES FOR PRIMARY SCHOOL



Scuola Primaria



Materiali didattici
(pdf scaricabili)

- Guide for teachers and parents
- Role play: it's a digital game that includes a series of environments linked to situations of food consumption to be explored with the help of special papers. The goal is to identify the correct choices or to correct, at least intuitively, what is good for our body and more generally for the environment in which we live. The exploration of the pop-ups that open after using the correct paper, allow to support the choice with information and advice.

RESOURCES FOR SECONDARY SCHOOLS (FIRST GRADE)



Scuola Secondaria I grado



Materiali didattici
(pdf scaricabili)

- Guide for teachers and parents

- Comic titled "Factory secret", available online and in print version, that offers a new adventure of the Paladins of Gaia, in the fight against SPRECA, association evil that seeks to destroy the planet and its inhabitants. The focus is on sustainable consumption and sustainable food.
In the digital version, the plot is also interspersed with 3 inserts educational-based quizzes and informative pills and an insert on the last end, as the conclusion of the story.
- Digital Adventure Comic, to browse online but also printable, in which students are immersed in the mission of 3 characters, Paladins of Gaia, against SPRECA, a terrible company that wants to contaminate the world of waste. Through special devices, the students have to overcome the tests and quizzes of food waste, energy, to help the Paladins to find the solution anti-waste.




RESOURCES FOR SECONDARY SCHOOLS (SECOND GRADE)



- Guide for teachers and parents
- 3 Infographics that help framing the relationship between waste and power.
- Video contest with educational resources on the themes: food as travel, food as an opportunity and profession and food as continuous innovation.

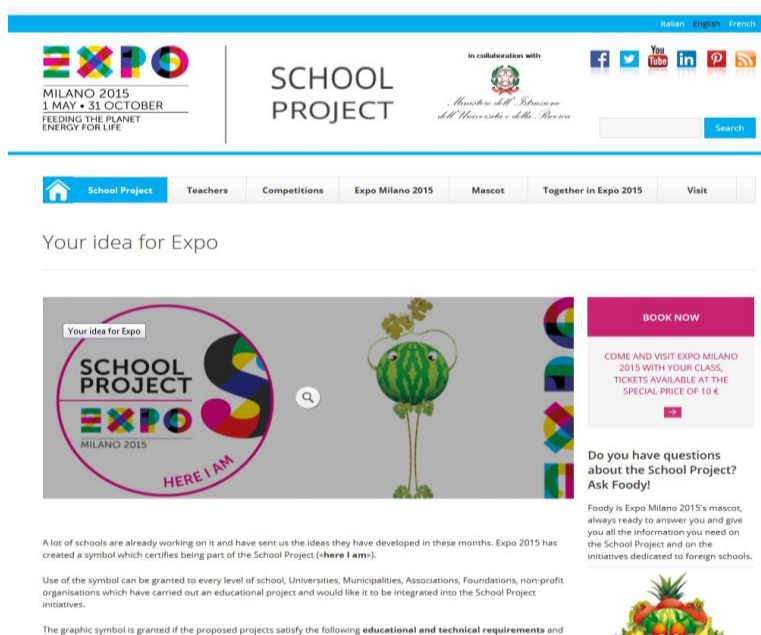
<p>SWOT</p>	<p><i>Strengths:</i></p> <ul style="list-style-type: none"> - Innovation related to the Contents, because the concept of waste is investigated in all its forms - Innovation related to the methodology (Edutainment): through games, digital formats and Videos children of all ages can learn how to make sustainable choices - Playful and multidisciplinary approach that encourages, through a deeper engagement, understanding the implications of the waste, creating awareness in the use of the resources and in the development of a critical approach for acquiring a sustainable behavior. - The platform is dedicated to the entire educational system: from kindergartens to Secondary School - It's hosted on a dedicated website or webpage accessible online via multiple browsers (Firefox, Google Chrome, Safari, etc.) - It's available both online and offline <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - The platform is only in Italian
<p>Other comments</p>	<p>It has a doubly innovative approach: in terms of contents and tools used and in terms of methodology.</p> <p>It's very well structured and it's divided in relation to the different ages of the students.</p>

Practice 2

Name/abbreviation	   <p style="text-align: center;">SCHOOL PROJECT – EXPO 2015</p>
Type of practice	<p>Platform aimed at raising awareness among students on the Theme: «Feeding the Planet, Energy for Life».</p>
Institution/organisation/editor	<p>Protocol between the Ministry of Education, University and Research (MIUR) and Expo 2015 S.p.A</p>
Usability	<ul style="list-style-type: none"> • Multi-device (laptop, LIM, tablet, etc.) • Multi-platform (MOOC, Windows, Mac OS, Linux, Android, IOS, etc.)
Technical requirements	<p>The Platform is available for GNU/Linux, Microsoft Windows and Mac OS X, Android.</p>
Web address/ link	<p>http://www.progettoscuola.expo2015.org/en/</p>
Users/ target group	<p>All the educational system: from kindergartens to Universities</p>
Brief description	<p>In occasion with the EXPO 2015, teachers and students were invited to take part in a didactic «journey». The initiative began with a classroom project focused on the theme of Expo Milano 2015 and culminated with a visit to the exposition site, with the aim of leaving behind a wealth of knowledge and experience to future generations.</p> <p>Schools' visions and values are decisive in spreading contents e guaranteeing the inheritance of this Universal Exposition; for this reason teachers and students were invited to take part in specific training and educational initiatives, allowing the new generations to tackle and find out more about the Theme «Feeding the Planet, Energy for Life» and ensuring that the heritage generated inside schoolrooms in every Country is shared with society at large.</p> <p>A series of competitive initiatives to interest schools in the Theme of food and sustainability and to encourage the swapping of experiences in Expo 2015 themes, also with schools in other countries were established to the platform.</p> <p>Projects entailed the creation of fully digitized documents:</p> <ul style="list-style-type: none"> • Suitable for developing teaching/learning paths through digital activities (e-tivities) linked to: information resources research, lesson/discussion, teamwork, storytelling

- Multi-device (laptop, LIM, tablet, etc.)
- Multi-platform (Windows, Mac OS, Linux, Android, IOS, etc.)
- Accessible according to the current regulations
- Available both online and offline
- Released through creative commons licenses or similar licenses.

The best school projects, selected through contests, were presented at the Italian Pavillon, enlivening the Schools' Breeding Ground for the entire duration of the Event.



The platform also contains a series of on-line training courses: Massive Open Online Courses (MOOCs) split into three modules:

MOOC 1 - DIGITAL STORYTELLING AT SCHOOL

This MOOC offers an overview of the use of digital storytelling in educational environments with a particular focus on the PoliCultura-Expo project. In particular, the teachers were shown a process to create a multimedia communication artefact, at the same time discussing possible uses in education and consequent benefits.

Three editions of the course have been run (two in Italian and one in English) attracting a total of over 1,700 applicants.

Foreign participants came from 28 different countries: Argentina, Bangladesh, Belgium, Bulgaria, Cyprus, France, Ethiopia, Philippines, Georgia, Ghana, Greece, Iran, Italy, Latvia, Lebanon, Macedonia, Nigeria, Norway, Holland, Pakistan, Qatar, Romania, Spain, South Africa, Turkey, the UK, the USA, and Zimbabwe

MOOC 2 - EXPO MILANO 2015 AND EDUCATION


By means of interviews with experts, a well-designed sitography and a video


	<p>with further information, the MOOC aimed to introduce teachers to the issues of the thematic categories of Expo Milano 2015, supporting them in planning focused and efficient teaching activities.</p> <p>The MOOC has been run five times (four editions in Italian and one in English) with a total of more than 1500 participants.</p> <p><u>MOOC 3 - "POLYCULTURE" AT EXPO MILANO 2015</u></p> <p>This MOOC, which makes use of projects, was created to support participants in the PoliCultura-Expo contest, which asked schools to create an interactive multimedia narration of the EXPO themes. The course provided constant concrete support for participants in all the phases of creating the narration.</p> <p>More than 700 enrolled in the MOOC dedicated to PoliCultura-Expo.</p>
<p>SWOT</p>	<p><i>Strengths:</i></p> <ul style="list-style-type: none"> - The platform is dedicated to the entire educational system: from kindergartens to Universities. - It's capable of encouraging schools to produce contents through digital and lab activities, seminars and interdisciplinary didactic paths - It's hosted on a dedicated website or webpage accessible online via multiple browsers (Firefox, Google Chrome, Safari, etc.) - The platform can leave behind a mass of contents and experiences for the future generations. - It's available both online and offline - It standardizes the constructive energies of the educational community - It gets the most out of the Italian school system's human capital also in comparison with different international situations; - It offers the chance to emphasize how school represents the future upon which a Country's value depends - it offers a variety of teaching tools and it is relatively easy to use. - It accepts images, video, and material produced in programs such as Camtasia, Audacity, etc. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - The platform is only in Italian and in English - It's strictly related to the EXPO event and it can be argued that the experience won't be reproduced.
<p>Other comments</p>	<p>The School Project is</p> <ul style="list-style-type: none"> • Consistent with the original theme of Expo Milano 2015, devised

and developed specifically for Expo Milano 2015

- Created with the aim of actively involving students, while encouraging their autonomy in the management of learning activities and interaction with teachers
- Suitable for promoting an individualized/personalized learning path also for students with disabilities and/or learning difficulties
- Capable of promoting traditional teaching and learning methods through an innovative approach

Practice 3


Name/abbreviation	 ICoN – Italian Culture in the Net
Type of practice	Virtual campus of Italian language and culture
Institution/ organisation/ editor	<p>ICoN - Italian Culture on the Net - is a consortium composed of nineteen Italian universities operating in agreement with the Italian Ministry of Foreign Affairs. The Consortium was established in 1999 under the patronage of the Chamber of Deputies and with the support of the Italian Prime Minister and the Italian Ministry of University and Research; the ICoN Consortium pursues the aim of promoting and disseminating the language and culture of Italy throughout the world through e-learning technologies and specific educational initiatives.</p> <p>The universities participating in the consortium are: Bari, Bologna, Catania, Genoa, State University of Milan, Padua, Parma, Pavia, University for Foreigners of Perugia, Pisa, “La Sapienza” University of Rome, “Tor Vergata” University of Rome, Roma Tre University of Rome, Salerno, University for Foreigners of Siena, Turin, Venice, IULM Free University of Languages and Communication of Milan and “L’Orientale” University of Naples</p>
Usability	<p>All ICoN visitors can register as users. Registered users can read and download all the works present in the Digital Library, consult the Audio and Video galleries and receive information about the activities of the ICoN Consortium.</p> <p>An annual subscription is available for registered users, schools and universities; this allows access to the complete texts of the teaching modules, the works in the Virtual Museum and all the Encyclopaedia entries</p>
Technical requirements	<p>Operating Systems: MS Windows (XP and later), Linux (all versions), Mac OS X, iOS, Android.</p> <p>Browser: Chrome (recommended), Opera 10 and later versions, Microsoft Internet Explorer 7 and later, Mozilla Firefox 13.0 and later, Safari 4 and later.</p> <p>Browser configuration: enable cookies, enable Javascript; allow pop-up windows to open.</p>

	<p>Hardware requirements: sound card; headphones or loudspeakers.</p>
<p>Web address/ link</p>	<p>http://www.italicon.it/it/index.asp</p>
<p>Users/ target group</p>	<p>Universities, colleges, secondary schools, educational centers, teachers and students, foreign citizens and for Italians resident abroad.</p>
<p>Brief description</p>	<p>ICoN offers a unique combination of services and resources such as:</p> <ul style="list-style-type: none"> - Degree Course in Italian Culture and Languages, run jointly through telematic media by the Italian Universities collectively making up the ICoN Consortium - First and First and second level Univeristy Master’s Degree - Italian Language courses - Digital Library, Virtual Museums, Encyclopedias, Audio and Video Galleries - Interactive community and teaching-learning services (this opens up the possibility of sharing the different educational experiences of students from all over the world who constitute an Internet community. <p>The subject areas are:</p> <ul style="list-style-type: none"> - Antiquites - Philosophy - Geography - Literature - Language - Music, Theatre and Cinema - History of Art - History of Social Science 

	<p>Other than this, for teachers and students of the fourth year of High School, ICoN offers the ICoN AP® Italian Language and Culture online course to prepare for the <i>AP Italian</i> examination. The course is distributed by ICoN in cooperation with IACE (<i>Italian American Committee on Education</i>) and is approved by the US College Board.</p>
<p>SWOT</p>	<p><i>Strengths:</i></p> <ul style="list-style-type: none"> - ICoN offers a variety of teaching tools and it is relatively easy to use. - ICoN combines on line learning activities with tools that allow easy consultation of texts, images and encyclopaedia entries connected with Italian culture. - The ICoN interface has been translated in multiple languages - In addition to the images contained in the Museum, by virtue of agreements with CIBIT -<i>the Interuniversity Centre for the Italian Telematic Library</i> - and with the Institute of the Enciclopedia Italiana, ICoN presents an extensive selection of texts and encyclopaedia entries on its website. The Digital Library gives all registered users the possibility to consult and freely download 318 works by 104 of the major authors of Italian literature. - <i>E-learning effectiveness</i> - ICoN's online courses are designed by experts in the teaching of Italian. All the courses have been created using techniques that allow students to benefit from the most advanced distance learning research. - <i>Interactive approach</i> - The courses emphasize communication and interaction. All the courses share the same fundamental approach: "learning by doing". There are ready-made style templates for the content creator to use. - <i>Multimedial contents</i> - Every course is made up of about 1000 activities. Each activity is provided with an automatic correction mechanism, as well as images and texts. All the activities are also enhanced by audio and video material, which has been created with the aid of professional actors who are native speakers of Italian. - <i>Personalization of the learning paths</i> - All the courses are designed for "self-access" learning. The activities proposed in each course follow a recommended path, but the users can also navigate the materials according to their own preferences and create your own route. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - The courses in Italian Language can be accessed only by purchasers. Students enrolled on the Degree Course have access to all the teaching/learning resources, the Community section


	<p>and the forum pages. Access to the virtual classes and interaction with the tutors is reserved to students enrolled on the tutored degree course and on the Master's courses</p> <ul style="list-style-type: none">- All the other resources can be consulted both by ICoN students and subscribers who have to register to the platform
Other comments	<p>Icon is an important example of Networking (19 Universities) with the aim to offer programs of high quality</p>


Practice 4

Name/abbreviation	 <p>La scuola scomposta (decomposed school)</p>
Type of practice	<p>Application of the school physical and technical resources to transform the traditional space in ICT learning space</p>
Institution/organisation/editor	<p>Scuola superiore Liceo “F. Lussana” di Bergamo/ Centro studi “impara digitale”</p>
Usability	<p>Indications and practical application of the ICT in terms of new approaches to the daily didactic activity</p>
Technical requirements	<p>Availability of e-book readers and i-pad in class, Digital Board and good Internet connection</p>
Web address/ link	<p>http://ricerca.imparadigitale.org</p>
Users/ target group	<p>Universities, colleges, primary schools, secondary schools, educational centers, teachers and students</p>
Brief description	<p>The project intends to re-shape the space of the class and the organization of the didactical approach with a daily use of e-documents.</p> <p>The classroom is re-designed in order to follow the Montessorian indication of a space to be adapted to the learning style of the students and full interconnected with the other classes in order to have a very integrated cooperative learning</p> <p>In the decomposed schools not paper materials are used but all the material are basically produced by the teachers or by the students or are selected in the Internet</p> <p>The students are asked to prepare the lessons with originals and in group preparative research about the topic and the teachers has the task to “systematize” the knowledge</p>


	
<p>SWOT</p>	<p>Strengths:</p> <ul style="list-style-type: none"> The students are really involved in the activity and can experiment what is cooperative learning The school learning space is more conformable and suitable for creating a good and positive atmosphere Creativity is developed and promoted The approach per competences is very useful also in order to prepare the future life of the students <p>Weaknesses:</p> <ul style="list-style-type: none"> - Re-designing a learning space is a very positive adventure but not all the school can do that - ICT tools are not very expensive at the moment but for the educative institutions provide e-book readers and i-pad can be a problem - The teachers need to assume a new role, their training if not accurate risk to represent a weakness - A mentality change is needed for assuming a more “native digital” attitude by the teachers
<p>Other comments</p>	<p>Project address to re-design the physical space</p> <p>http://www.imparadigitale.it/wp-content/uploads/2015/11/Lago@ImparaDigitale.pdf</p> <p>ebook about the project (in IT only)</p> <p>http://www.imparadigitale.it/formazione/formazione/gli-ebook-sul-metodo-bardi-imparadigitale/</p>


Practice 5

Name/abbreviation	 eKnow
Type of practice	Small and operative e-learning courses, also provided in one-to-one modality for teachers and school operators
Institution/organisation/editor	Smart skills center-IBIS multimedia
Usability	Eknow is a web portal with the possibility to integrate short courses with experts and short video advises addressed to teachers
Technical requirements	Internet connection
Web address/ link	http://www.smartskillscenter.it/eknow/?redirect=0
Users/ target group	Universities, colleges, primary schools, secondary schools, educational centres, teachers and students
Brief description	<p>The portal is dedicated to the training of teachers, trainers and other educators. The portal hosts courses and learning environments on various topics and proposes innovative teaching methods and experimental approaches, focused on the interaction between experts of area (EMS) committed to produce digital content, set up online courses and interact with the participants, e-tutors (ET) pledged support participants both about the content of the courses in relation to the motivational aspects, methodological and organizational information broker (IB) are able to search, evaluate, select and organize digital resources on specific topics, both from form of knowledge base in response to requests of the participants. The courses are divided into 5 categories: MOOCs, SPOCS, Profs, and GLOCs PLECS.</p>



	
<p>SWOT</p>	<p><i>Strengths:</i></p> <p>It is a very practical approach to the e-learning activity, with personalized activities that can be considered an alternative to massive MOOCs</p> <p>It provides not only an educative approach but also a very short and not time-consuming learning activity in specific topic</p> <p>It is quite cheap and adapt to be provided in the national program of individual training of the teachers</p> <p><i>Weaknesses:</i></p> <p>It is a payment activity and for the schools it is not always simple to have a personalized activity for categories of teachers</p> <p>The program does not favor the development of teaching and learning communities</p>
<p>Other comments</p>	<p>The SPOCS (Small Private Online Courses) are learning environments for small groups interested in sharing issues or experience. It is a micro-learning experiences, the aim of which is typically in increasing both the accuracy of the work of trainers and teachers, student engagement and the ability to discuss issues and very specific topics, enhancing interactivity broadly, granting that the motivation and performance of the participants can be supported by focusing in particular on the problem based approach</p> <p>Examples of spocs</p> <p>http://www.smartskillscenter.com/prodotto/imparare-a-conoscere-il-paesaggio-italiano/#.Vo6SVzbuEVh</p>

Practice 6

Name/abbreviation	 Dyslexia MOOC
Type of practice	Moc platform and web interactive portal
Institution/organisation/editor	Centro studi Montesca- Provincia di Perugia
Usability	Available in all the devices
Technical requirements	Internet connection
Web address/link	http://www.montesca.eu/dyslexia/ http://montescalearning.com/main/mod/page/view.php?id=14
Users/ target group	colleges, primary schools, secondary schools, educational centres, teachers and students
Brief description	<p>The Portal contains all the information about how to face situation where students with dyslexia characteristics are involved</p> <p>Moc courses are provided in Italian and cover specific issues generally not involved in training addressed to dyslexia problems such as management of the class in case of presence of students with learning difficulties</p> <p>A wide library of video about dyslexia is available in Italian</p> <p>A specific manual is provided about how to organize the teachers in order to have a positive response to the problem</p>


	
<p>SWOT</p>	<p><i>Strengths: **</i></p> <p>The courses are very practical and can be followed by the teachers organizing their own time</p> <p>The manual is useful and gives a lot of simple practical indications</p> <p>The video library is quite well organized and covers different aspects</p> <p>There is a very good and participated learning community</p> <p><i>Weaknesses:</i></p> <p>The Mooc courses sometimes do not obliged the teachers to follow a common organization and the sense of learning community risk to be disperse</p> <p>The manual is practical and simple but it needs the involvement of the school management and to have it is not always possible and simple</p> <p>The video library does not defined in details the contents of the videos and the only way to know the contents is watching them</p> <p><i>** based on the evaluation of an external expert</i></p>
<p>Other comments</p>	<p>It is also possible obtain a certification valid in Italy with the trademark MontescaDyslexia Friendly registered in Italy</p>

Practice 7

Name/abbreviation	 Alexandria.net
Type of practice	Repository and interactive ICT library for teachers
Institution/organisation/editor	Wikiscuola S.r.l.
Usability	Very huge possibility of creating and publishing documents in the more common formats
Technical requirements	Internet connection
Web address/ link	http://www.alexandrianet.it/htdocs/index.php/site/page?view=about
Users/ target group	Primary schools, colleges and secondary schools, educational centres, teachers and students
Brief description	<p>The portal unlimited access to all resources and content contained in the catalogue, for all subjects and for all levels of school, to be found in the archives for keywords, tags or other more advanced ways of cataloguing, that you can view, download and use with your classes and your pupils</p> <p>It is also possible loading publication, already processed in digital format (text, images, audio, video, eBooks, presentations etc.), to be sharable with colleagues and pupils interested in that content</p> <p>The portal can be also used as personal library online accessible from any computer or device to upload and classify content and resources, in order to have everywhere - in class, at home or in any other professional context and not – materials for teaching,</p> <div>  </div>

<p>SWOT</p>	<p><i>Strengths:</i></p> <p>Wide categories of topics and documents</p> <p>The list of categories helps the teachers and the students to find easily what they need</p> <p>The format of the documents and teaching and learning material is various and can satisfy all the devices</p> <p>Most of the learning objects are free</p> <p>The research engine is very useful</p> <p><i>Weaknesses:</i></p> <p>The contents are not always described in details and to know the usability of the contents it is needed to use them and it is very time consuming</p> <p>The registration form asks a lot of data (e.g. fiscal code)</p> <p>Creating new object or uploading them it is a bit difficult</p>
<p>Other comments</p>	<p>Alexandria is an environment dedicated to "self-publishing" of teachers for the Italian school, or to the online publication of materials and digital resources produced in-house by teachers, preferably in open formats, to promote educational cooperation, knowledge as a common good and the 'use of open educational resources (Open Educational Resources - OER) in the Italian school.</p> <p>Every day, throughout the year and for all the materials, there are thousands of school teachers of all levels that produce digital educational content for their students. All this huge amount of material - in many cases good if not great quality - often likely to remain closed in the classrooms, or in the hard disk of individual teachers, without being able to become a common heritage, as it can now easily be done with the digital formats and the Internet</p>

Practice 8

Name/abbreviation	 Il giornale Web con gli studenti Repubblica@scuola
Type of practice	<i>Educative interactive web tv for developing project of journalism</i>
Institution/organisation/editor	News paper "la repubblica"/gruppo editoriale L'espresso
Usability	Different activities and video experience for all the devices
Technical requirements	Internet connection
Web address/link	http://scuola.repubblica.it
Users/ target group	Colleges, primary schools, secondary schools, teachers and students
Brief description	<p>the initiative is leaded by Gruppo Editoriale L'Espresso, the daily newspaper La Repubblica, and the site www.repubblica.it, leader in the field of information in Italy. From</p> <p>The project, entirely free, is online to be closer to the world of young people and new media. On the website young people, with the support of teachers and the guidance of the editors of the Republic, can also take confidence with the different tools of journalism.</p> <p>The portal of the Republic @ School, www.repubblicascuola.it, is increasingly interactive and full of opportunities:</p> <p>Principals and teachers can be featured on the channel Rep @ School Repubblica.it that has millions of readers every day.</p> <p>They are able to:</p> <ul style="list-style-type: none"> Having the opportunity to be interviewed by the editorial staff and express their opinions on schools http://scuola.repubblica.it/archivio-interviste/. Give visibility to set up and to school initiatives in the "Showcases school" http://scuola.repubblica.it/vetrina-scuole. Exchange opinions and experiences with colleagues from all over Italy in the Forum of teachers <p>The editorial department offers insights, news stories to expose students to</p>

the world of information and help them learn how to write an article and describe, in first person, the reality around them.

- APPRENTICES PHOTOGRAPHERS AND ARTISTS.

Students with a passion for the arts can contend for the podium in races involving photography and design launched at national level and scanned twice a week, by the editorial staff.



SWOT

Strengths:

The on line activity is provided together with a very large list of on didactical resources with the participation of famous Italian writers and artists in what it is defined “the largest Italian classroom”

Due to the relevance of the publisher “l’espresso” a lot of connections and links with national and European events are possible

The journalistic activities are original and quite important for the Italian schools


The completions launched by the site can be very interesting and attractive for the students

Weaknesses:

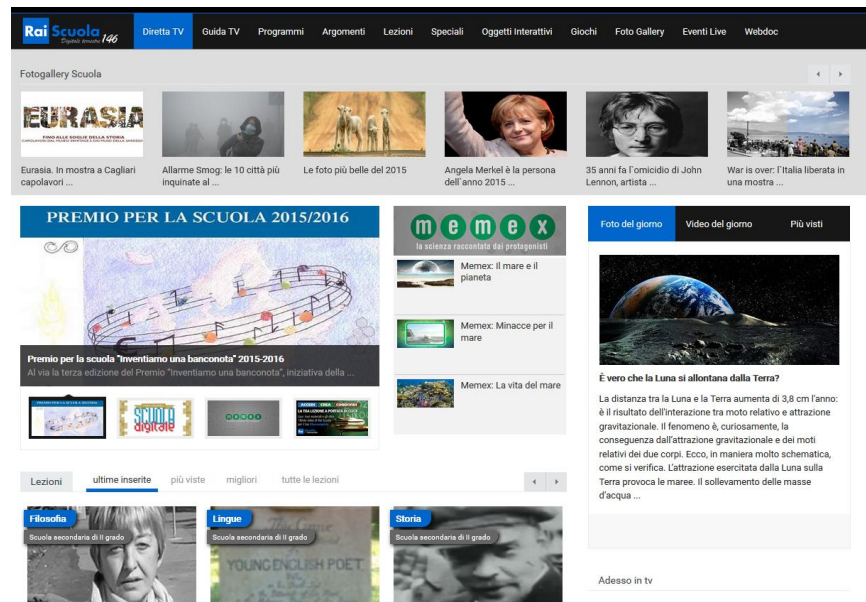
- Being addressed to a large scale audience the activities are not

	<p>personalized</p> <ul style="list-style-type: none">- Sometimes is not very intuitive to verify the contents and the usability of the materials- The conferences and the video lessons are not selected per categories of students but only per the topics they cover
Other comments	<p>The editorial activity of the students can be recognized and certified by the Ministry of education.</p> <p>In the site it is possible to have a space for the school journal</p> <p>http://scuola.repubblica.it/ricerca-scuola/?name_school=&type_search=M&region_search=ABR&province_search=&searchSchool=Cerca</p>

Practice 9

Name/abbreviation	 RAI scuola
Type of practice	Educative interactive web tv for sharing video RESOURCES
Institution/organisation/editor	RAI
Usability	Different activities and video experiences for all the devises
Technical requirements	Internet connection
Web address/ link	http://www.raiscuola.rai.it
Users/ target group	Universities, colleges, primary schools, secondary schools, teachers and students
Brief description	<p>Rai School is addressed primarily to provide video resources about school subjects at different school levels and degrees. The school subjects concerning science, English language, but also road safety education. The main project is the D, a container of training programs and the BBC sitcom produced by RAI.</p> <p>From 19 March 2012, the programming has been renewed, with the addition of a new cultural wing daily, called Nautilus, which includes programs already above on the channel (CultBook, Art News, Gap) and new programs (Zettel, a program about philosophy and lessons from the crisis, a program of economy and).</p> <p>The programs of Rai School are often produced in collaboration with the Ministry of Education, University and Research.</p> <p>In 2006 it was starting broadcasting the British series Goal - Speak English, Play Football in the original language, but without subtitles.</p> <p>The channel was launched in 2000 and was originally popular only satellite. Until 1 February 2009 Rai Edu 1 was available on digital terrestrial television in much of the Italian territory with the MUX B. Since Feb. 2, 2009 has been replaced in this Multiplex Rai History. Until the night of 17 and 18 May 2010, Rai School was also available on DTT. On 21 December 2011, the returns on digital terrestrial channel for areas covered by RAI multiplex MUX 2 until September</p>

14, 2015 when it moved to the multiplex MUX RAI 3.



The screenshot shows the Rai Scuola website interface. At the top, there is a navigation bar with 'Diretta TV', 'Guida TV', 'Programmi', 'Argomenti', 'Lezioni', 'Speciali', 'Oggetti Interattivi', 'Giochi', 'Foto Gallery', 'Eventi Live', and 'Webdoc'. Below this is a 'Fotogallery Scuola' section with several image thumbnails and their titles: 'EURASIA', 'Allarme Smog: le 10 città più inquinate al...', 'Le foto più belle del 2015', 'Angela Merkel è la persona dell'anno 2015...', '35 anni fa l'omicidio di John Lennon, artista...', and 'War is over: l'Italia liberata in una mostra...'. There are also sections for 'PREMIO PER LA SCUOLA 2015/2016', 'memex' (la scienza raccontata dai protagonisti), and 'Foto del giorno'. At the bottom, there are 'Lezioni' tabs for 'Filosofia', 'Lingue', and 'Storia'.

SWOT

Strengths:

It is a very large repository of video lessons covering a lot of topics

The quality of the videos is very good and presentation of the lessons is very professional

It is possible to create and to organize video lesson to be added to the proposed ones

The interactive videos (especially about science education) are very well realized and are very innovative

Experts and teachers are mostly very important person in their fields

There is the possibility to follow very interesting live streaming events

Weaknesses:

- The site is not addressed to create any community of students and teachers
- Even being a very large repository of video is not a real educative web tv
- Some events are broadcasted in live streaming but no interaction is allow
- The interaction with the social media is not entirely explored
- Most of the resources are broadcasted in TV and not realized expressly for the school audience
- The virtual tour are quite interesting but not RAI always interactive

	<ul style="list-style-type: none">- Most of the video are shared with Rai letteratura and are not expressly addressed to the schools
Other comments	You can have a look about how to create a video lesson http://www.raiscuola.rai.it/startLezioni.aspx?crea=1

IV. Conclusions and recommendations

This report attempts to summarize and classify good e-learning practices in the three project countries but also to identify certain limitations and offer possible solutions for overcoming them within the EFES project implementation. A detailed analysis of the country reports reveals clear patterns and some major trends can be observed.

In Italy, for example, there is a virtual campus of Italian language and culture (ICoN) which includes a network of 19 universities. ICoN, a complex variety of teaching tools, primarily focuses on interactive approach and personalization of the learning paths and each multimedia course content consist of 1000 activities with an automatic correction mechanism. Another innovative e-learning practice is RAI scuola, educative interactive web TV for sharing video resources. RAI scuola is a large repository of video lessons covering a wide variety of topics that also offers the possibility to follow live streaming events. Furthermore, La scuola scomposta manages to transform the traditional space into ICT learning space. Following the Montessorian method and adapting the classroom environment to the learning style of the students, it makes them utterly involved in the learning process, resulting in actual cooperative learning.

In Greece is developed the so called *Greek School Network* - a combination of e-learning service, electronic classroom service, video services and live communication and cooperation service. It is a complex solution supported by the Greek Ministry of Education that allows primary and secondary school teachers to create interactive learning content and to provide a solid cooperation environment. Another good e-learning practice are *Natural Europe educational collections* - an open source authoring tool and a repository of educational pathways and resources. The educational pathways approach allows various topics in an integrated and interdisciplinary way and all activities are based on collaborative learning. The Open eClass is an e-learning platform that is used by educational institutions, enterprises, teachers and students. It allows users to organize, store and distribute educational materials, including multimedia content. Communication, information and collaboration tools are provided through this platform.

There is variety of independent authoring tools and e-learning platforms in Bulgaria too. The authoring tools (like eXeLearning, Audacity, Camtasia and Hot Potatoes) can be used to develop interactive online materials through audio, video and assessment options. *Ucha.se* is an online platform containing video lessons and exercises for school education. There are over 4300 video lessons which present the content supported by situational examples that require simultaneous viewing, listening and writing. *U4ili6teto.bg* is an e-learning management system that provides support and technology to educational institutions, schools and universities. It is used to create interactive content and activities and for learning process management. Developed on pedagogical principles, the application is suitable for blended learning, distance education and other e-learning methods. It provides both synchronous and asynchronous communication, as well as assessment options with detailed feedback and plenty of collaborative patterns. Certain weaknesses and limitations, however, can also be detected. Teachers can find some of the applications time-consuming and difficult to use. Some of the activities are not personalized since they are usually

targeted at a large scale audience. A big number of the described e-learning practices are paid and this could be a major obstacle. Another significant disadvantage is that they do not favor the development of teaching and learning communities.

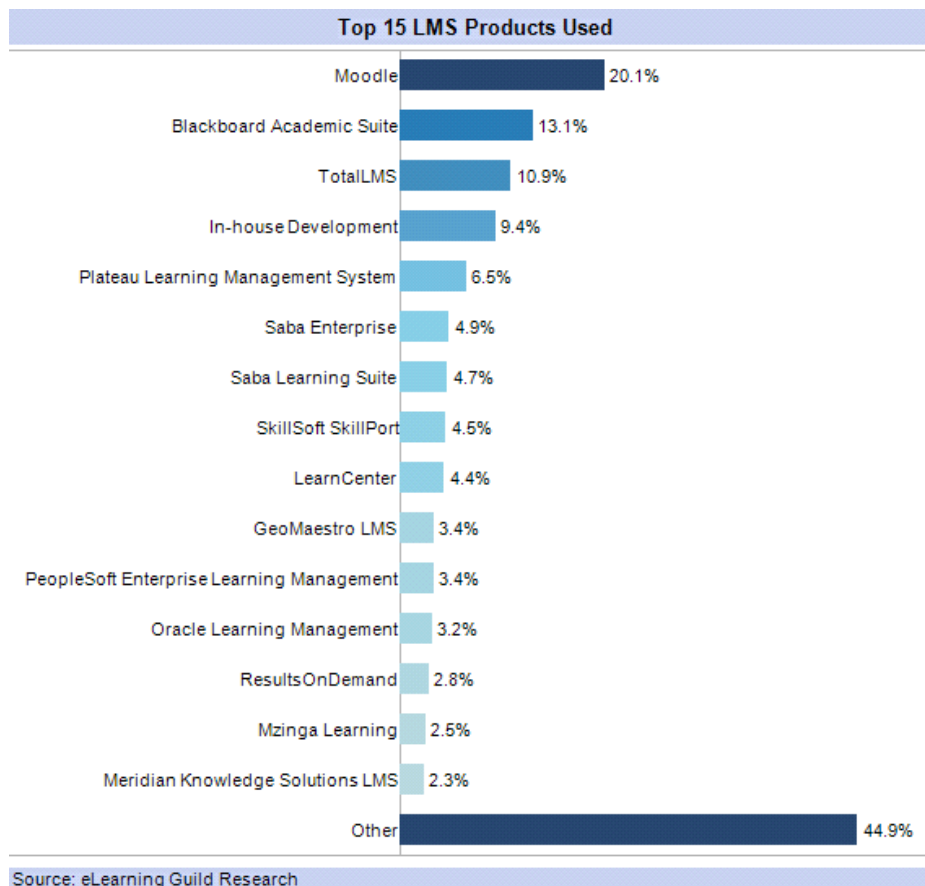


Fig. 1. Moodle got the top rank in almost all the categories in the domain of Learning Management System.

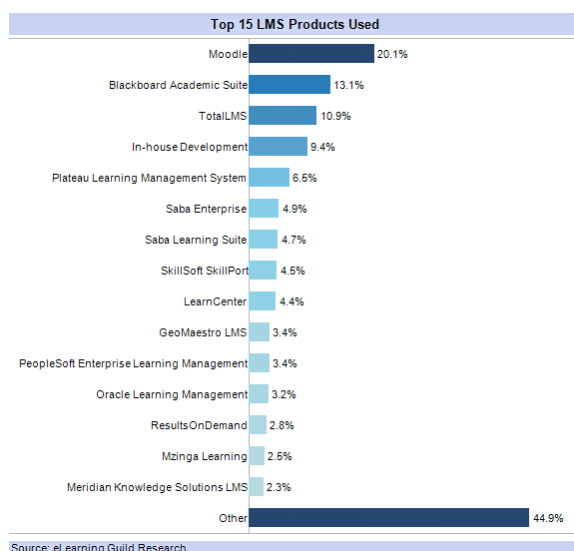
The greatest advantage of Moodle being open-source is that it is maintained by a global community of developers along with the development team at Moodle. The LMS upgradation will be done by adding new features and it will be done very frequently. Any new feature developed passes through internal testing first and then released as beta version on the website. They will also share the beta version to all volunteers of beta testers to test and report the bugs. After fixing all the bugs, it will be released as the stable version.

Every organization may have different workflows and approaches in providing trainings to their internal employees or external distributors or channel partners. The cost of having customized feature in commercial LMS is very high as the application is designed based on the generic requirement. Here Moodle is the best application to customize any feature according to your specific

requirement. You can hire a programmer or outsource it to any Moodle expert to develop this feature for you. It will be a very cost-effective solution as compared to commercial LMS.

Adding and removing of plugins is another advantage of Moodle being an open-source. Many developers develop new plugins and donate it on the Moodle plugins directory, so that any developer can download it and install it on their LMS without affecting the existing LMS code. If you have any specific requirement that is not available in the installed version then you can search in the Moodle plugins directory. Plugins can be downloaded freely and using the detailed document you can easily install it on the LMS with the help of the developer.

In conclusion, although Italy, Greece and Bulgaria have different types of e-learning practices such as e-learning platforms, authoring tools, repositories, digital libraries and web TVs, there is the repetitive pattern in all three countries using the same learning management system MOODLE (for example: *eKnow* in Italy, *Greek School Network*, *u4ili6teto.bg* in Bulgaria).



This, in turn, justifies the use of Moodle in the EFES project and will certainly facilitate the work of large educational communities in all three countries. The lack of a unifying approach (including both technical support and pedagogical guidance) makes the decision to integrate web TV with the learning management system Moodle even more significant and well-grounded as it will ultimately combine the best learning practices, targets the existing needs, provide practical examples and show how teachers apply ICT in their work.