
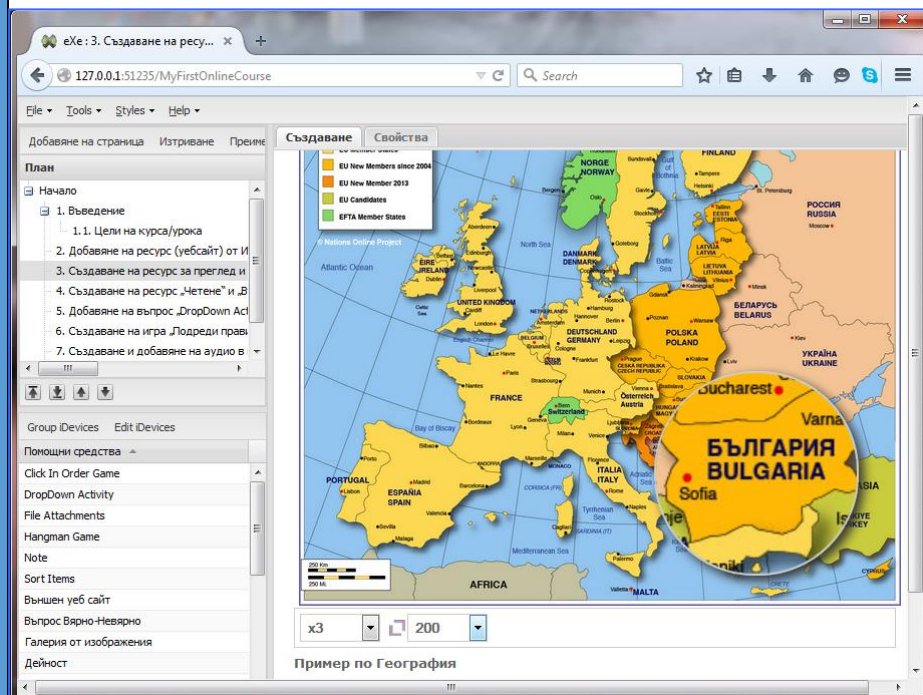


National research of good e-learning practices

BULGARIA

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, Tairāwhiti 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>


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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.

Other comments	<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.
Other comments	<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>

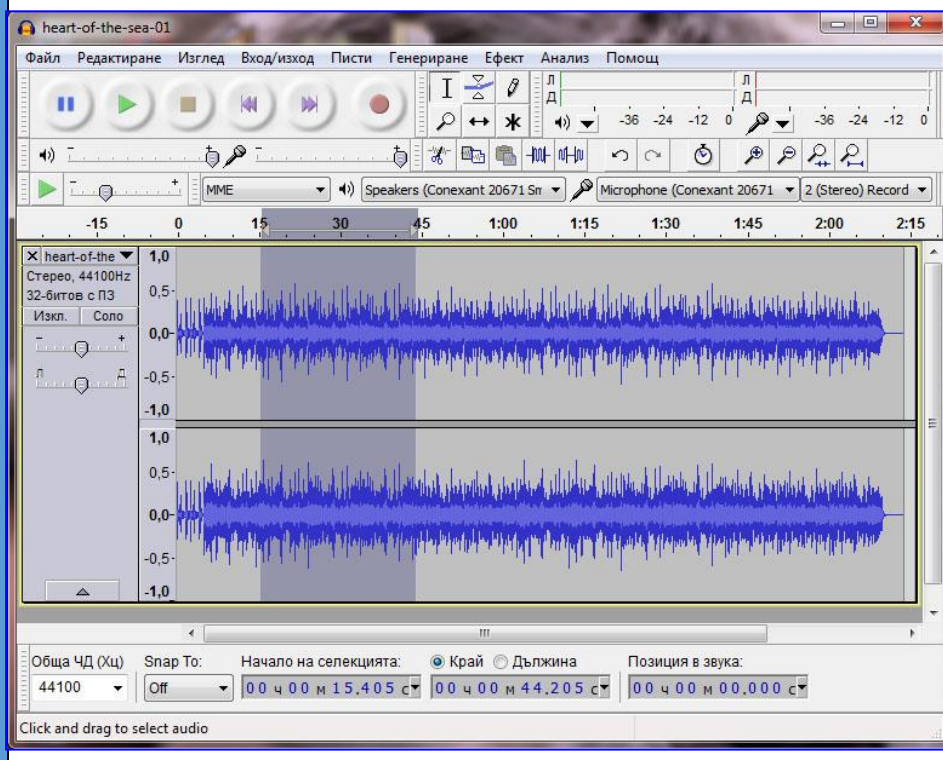
Name/abbreviation	 Audacity
Type of practice	Free, open source, cross-platform software for audio recording and editing.
Institution/organisation/editor	Dominic Mazzoni and Roger Dannenberg

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

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 (*LAME* MP3 library) which is free for download.

According to many professional experts, Audacity is one of the best software for audio recording and editing.



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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:

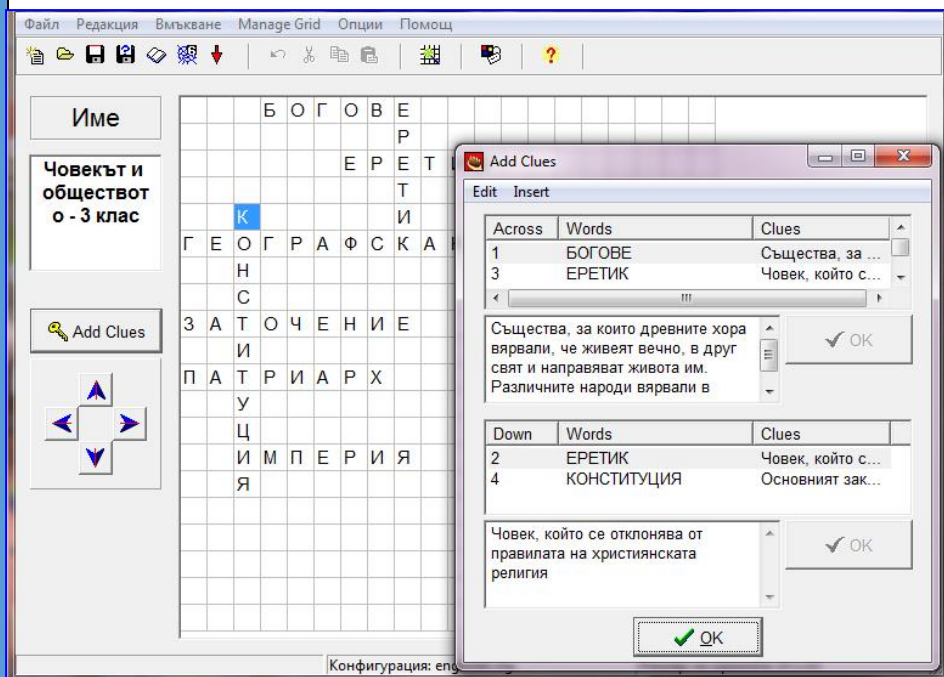
- Audacity's first major drawback is that the program is not as complete, as you will have to install plug-ins/encoders separately.
- Unfortunately, several bugs exist that can cause the program to become unstable.
- According to some experts, the program is limited in its mixing capabilities.
- Audacity lacks real time effects while recording.
- Some aspects of the application can be a bit complex.

Other comments

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.

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.

Name/abbreviation	 Hot Potatoes™ From Half-Baked Software Inc. HotPotatoes
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>




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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 well as with interactive multimedia content.
- Displaying and summarizing results is done automatically and the students may see the outcome of their performance.

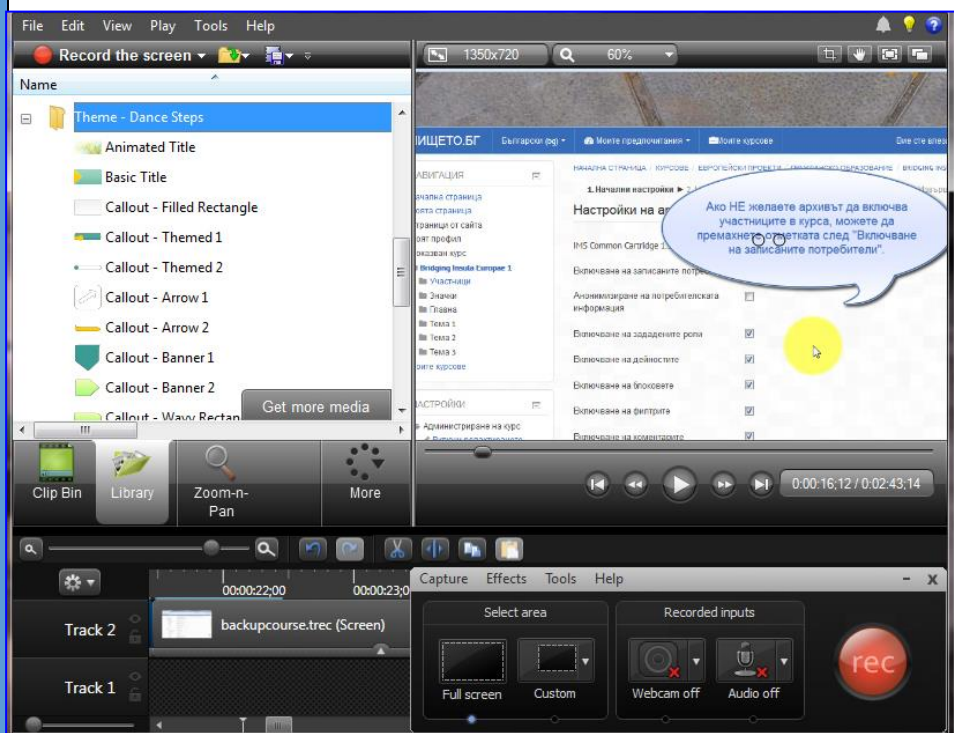
	<p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - From a teacher's point of view, preparing various activities and exercises can be a very time-consuming process - There are no possibilities to prevent the students from cheating. - The exercises created with Hot Potatoes don't keep history/statistics 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.
Other comments	Hot Potatoes interface has been translated in multiple languages and offers sufficient documentation and help.

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</p>

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.

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.

Camtasia is most often used by instructional designers and publishers rather than individual teachers and content creators.




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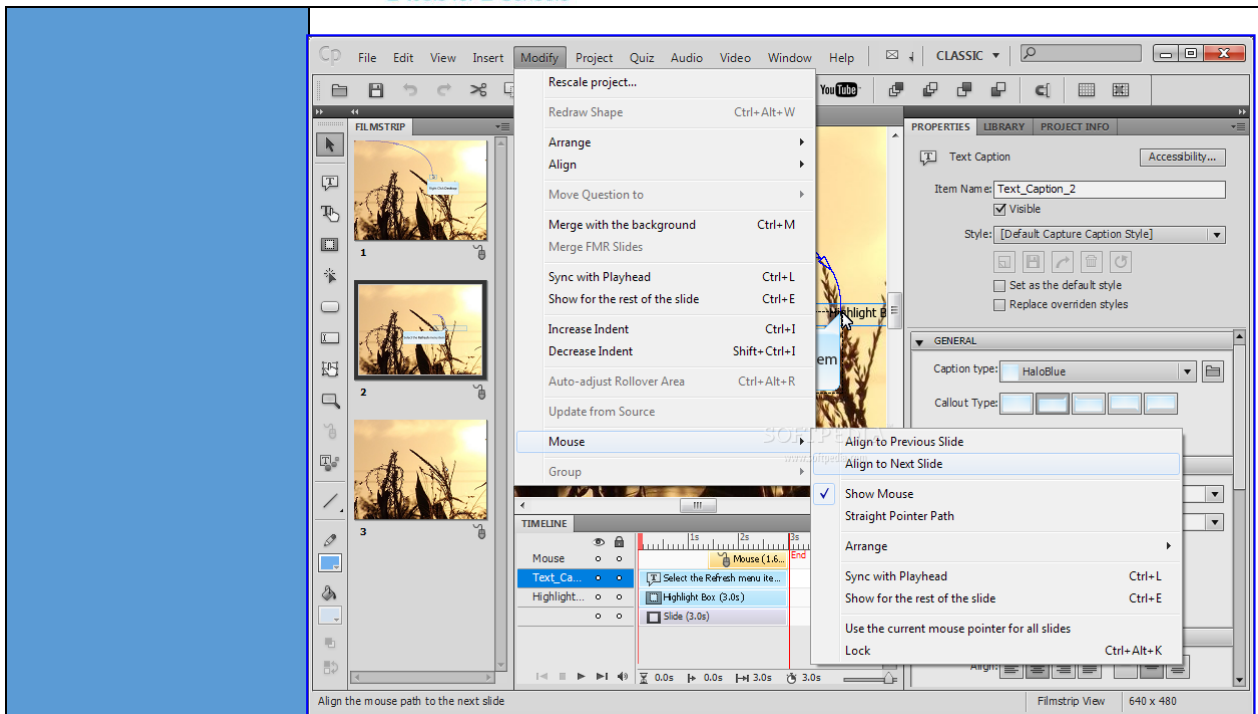
Strengths:

- 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.

	<ul style="list-style-type: none"> - 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 within the library tab for later use. - 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.
Other comments	<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>

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, Accordion, etc.</p> <p>Captivate supports SCORM standard (SCORM V1.2 and SCORM v2004) and is compatible with most Learning Management Systems.</p>



SWOT


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.
- 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.

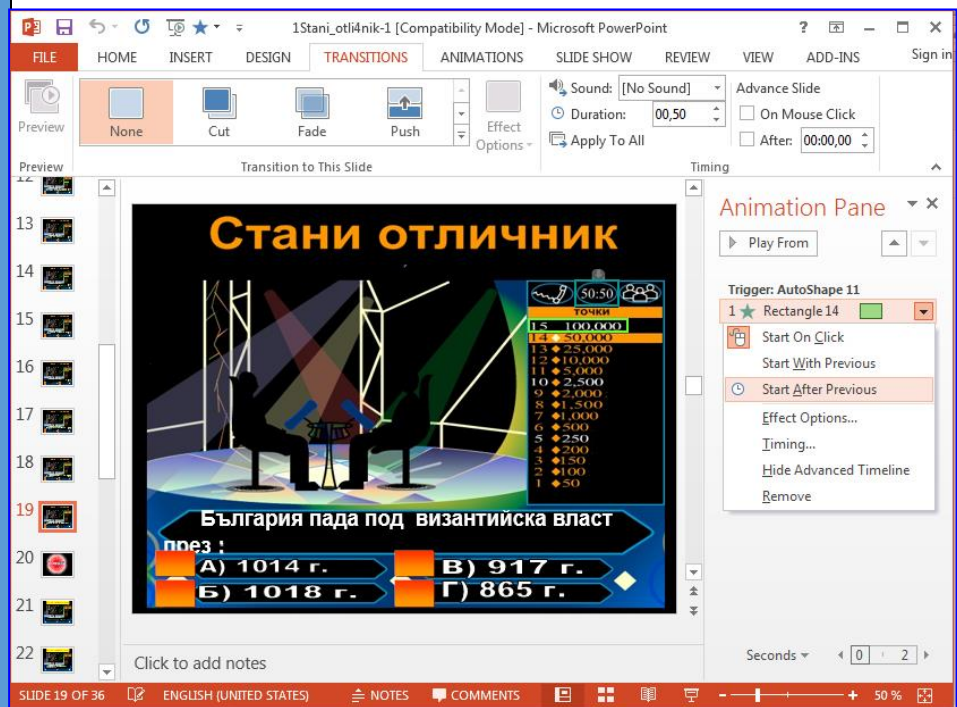
Weaknesses:

- The first disadvantage is that Captivate is not free.
- Captivate has too many features which makes it quite complex and

	<p>difficult to use.</p> <ul style="list-style-type: none"> - 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.
Other comments	<p>Adobe Captivate is frequently used by instructional designers, developers and publishers rather than teachers.</p> <p>Captivate provide sufficient documentation, tutorials, video courses end support.</p>

Name/abbreviation	 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	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.



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

	<p>limited, interactivity and produce not only presentations but also other learning materials such as quizzes with feedback and games.</p> <ul style="list-style-type: none"> - 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. <p><i>Weaknesses:</i></p> <ul style="list-style-type: none"> - Using only PowerPoint for e-learning purposes is not enough since it provides the content creator with a limited basic degree of interactivity. - 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>