

TOMASZ A. WALASEK*, ZYGMUNT KUCHARCZYK*, KRZYSZTOF SZEWCZYK**,
DOROTA MORAWSKA-WALASEK***

RAPID E-LEARNING TOOLS ON THE MOODLE PLATFORM

NARZĘDZIA DO SZYBKIEGO PRZYGOTOWYWANIA E-MATERIAŁÓW NA PLATFORMIE MOODLE

Abstract

One of the most frequently highlighted problems regarding online teaching reported by teachers is the time and effort required to prepare and regularly update attractive e-content. This is particularly true for multimedia content. On the other hand, the problem often reported by students is the low aesthetic value and teachers' failure to produce materials that students deem to be aesthetically attractive. This article presents some suggestions on possible ways to control and manage the visual side of e-content.

Keywords: e-learning, rapid authoring tools, moodle

Streszczenie

Jednym z problemów w e-learningu jest zgłaszana przez nauczycieli czasochłonność i pracochłonność przygotowania e-zawartości i jej aktualizacji. W szczególności dotyczy to multimediiów. Problemem często zgłaszanym przez studentów jest z kolei niska wartość estetyczna i brak dbałości o stronę wizualną projektu. W artykule zaprezentowano kilka porad dotyczących sposobów pozwalających zapanować nad wizualną stroną kursów.

Słowa kluczowe: e-learning, narzędzia do szybkiego autoringu, moodle

DOI: 10.4467/2353737XCT.15.346.4867

* PhD. Tomasz A. Walasek, PhD. Zygmunt Kucharczyk, Institute of Mechanical Technologies, Department of Mechanical Engineerings and Computer Sciences, Technical University of Czestochowa.

** PhD. Krzysztof Szewczyk, Institute of Industrial Electrical Engineering, Electric Department, Technical University of Czestochowa.

*** MSc. Dorota Morawska-Walasek, College of Foreign Languages in Czestochowa.

1. Introduction

The development of the Internet and the ongoing diffusion of such phenomena as electronic media, mobile and wearable technologies, and “the Internet of things” into our lives makes education as we know it a matter of the past. Today, no one doubts that e-learning is a fully legitimate teaching and learning medium in Polish universities.

Distance learning or e-learning is no longer a set of electronic presentations made available for students, nor is it providing merely pdf files or links to recommended websites. Nowadays, e-learning, e-teaching or e-education is an interactive method of tutoring which comprises: delivering teaching materials; managing the didactic process; monitoring and assessing progress; ensuring student-teacher as well as student-student communication; interaction by means of information technologies, particularly Internet communication tools [5].

The Sloan Consortium Report, published in 2010 [1], claims that in the USA alone, over 4.6 million students participated at least once in an online course offered in the previous semester. Interestingly, the figure increased by 17% in comparison to the year before and it is estimated that the increase is ongoing. The latest report indicates a growth of 3.7% year on year in the autumn of 2013. The year-on-year gain in the number of distance students (189,187) represents 73.7% of the increase in overall enrollments for this time period (256,650) [2].

To the authors' knowledge there is no similar data available for Poland. The findings of a survey conducted at Czestochowa University of Technology show that 14% of the polled students (464 persons) have experience in distance learning while 45% of students do not know what e-learning means in practice. However, it seems encouraging that nearly 80% of respondents voiced their readiness to enrol in an online course – this leads to the belief that there is a huge demand for such education [5]. The university should be urged to implement elements of distance learning, which ought to be preceded by a publicity campaign and a series of training sessions.

Distance learning is becoming a new way of gaining knowledge as an alternative to traditional education and the existing educational structures. Although technology plays a significant role in the process, it shouldn't dominate the didactics. The focus should be put on including properly designed, implemented and delivered e-courses.

Despite the many benefits of using the tools and techniques of distance learning in education, there has been a significant number of critical voices, complaints and problems lately. Preparing attractive e-content (teaching materials) has been seen as a laborious, time-consuming and costly process.

The present paper discusses some good practices in the field of developing attractive teaching materials that are rich in multimedia. Tools and methods used for developing such content are presented.

2. Background information – E-courses

In this paper, the solutions to improve the appeal of e-courses and creative ideas used in the 2014/2015 academic year in two e-courses at the Mechanical Engineering and Computer Sciences Department of the Technical University of Czestochowa are presented.

Narzędzia Doskonalenia Jakości - Quality Tools



Szanowni Państwo,

Witam Państwa w kursie on-line poświęconym Narzędziom Doskonalenia Jakości. Część elektroniczna kursu obejmuje 13 zagadnień z przedmiotu. Zaplanowaliśmy również 2 spotkania tradycyjne - w sali wykładowej. Mam nadzieję, że w tym semestrze nauczymy się stosować w praktyce narzędzia doskonalenia jakości. Będziemy też umieli wykorzystać w celu doskonalenia jakości technologie informacyjne.



Życzę owocnej pracy
Tomasz Walasek

Wiadomości i ogłoszenia
Pomocy!!!
Kawiarenka

New messages (3)
Go to messages Ignore

Fig. 1. Screenshot of the Quality Tools e-course. Example of the use of visual elements – pictures and word map

The first course was a thirty-hour project entitled Quality Tools delivered mainly over the Internet (26 hours online, 4 hours face to face) to students of three fields of regular and extramural studies: mechanics and machinery building, mechatronics, and biomedical engineering.

The second subject, Basic Manufacturing Technologies – Metal Working, was carried out entirely in the real world laboratory and the e-course was only used as an electronic repository (a hub) for the information concerning the issues presented in the laboratory and a virtual location for submitting reports and publishing the results of tests and exercises.

3. Why Moodle

Dedicated computer systems called virtual learning environments (VLE), learning management systems (LMS) or learning content management systems (LCMS) are used to organise and manage e-learning. These systems allow the user to create dynamic online services, either public or for a particular group of students. They offer a wide variety of tools supporting and facilitating the publication of the service content, in text or graphic form or as ready-made documents or usable applications. The systems make it possible to manage groups of users (students, teachers) as well as the resources created for them. They help organise the work of teams and individuals by offering tools which enable monitoring of the learning process. An attempt to incorporate e-learning into the traditional system of education at the Faculty of Mechanical Engineering and Computer Science was made as early as in 2001 at the Institute of Metal Forming, Quality Engineering and Bioengineering, when an e-learning platform was installed on the institute's server. With time, the scope of the tool application was extended to cover new areas, for example, to enhance student mobility [7]. When the decision was taken to support traditional classes with online teaching, an analysis was performed to compare the software available on the market. All the necessary requirements were defined and after studying the existing solutions, the Moodle platform was selected. Drawing on the literature review, the platform also appears to be popular in Poland [3, 4, 8].

We have used Google Trends Analysis to assess the search volume of selected e-learning platforms to analyse the popularity of Moodle, Blackboard, Fronter and Claroline in both Poland and the world over the previous ten years. The results, shown in Figure 2, prove that Moodle is definitely and unquestionably the number one LCMS in Poland while it is one of the two most popular learning content management systems in the world.

The reasons the Technical University of Czestochowa has chosen Moodle are:

- Moodle is an open source solution,
- uses free server solutions,
- enables the publication of e-content and advanced content management,
- allows the advanced management of users,
- ensures security for teachers and students,
- contains basic tools for authoring,
- it is intuitive, clear, legible,
- Moodle is a recognised standard in Poland and Europe,
- it is a developing platform with good and efficient support.

Having used the platform for several years, it seems that the decision was right and Moodle proves to be no worse than the existing commercial products while definitely surpassing other open source platforms.

The Moodle platform is also widely used as a workspace in European projects to exchange experience and know-how as well as to supplement various forms of education.

Figure 2 shows that the search-term 'Moodle' is much more popular in Poland than all the other platforms. This is a permanent trend. In the world, Moodle has a great competitor – a commercial platform called Blackboard. Due to the financial issues, the Blackboard platform has always been out of reach for the authors' University.

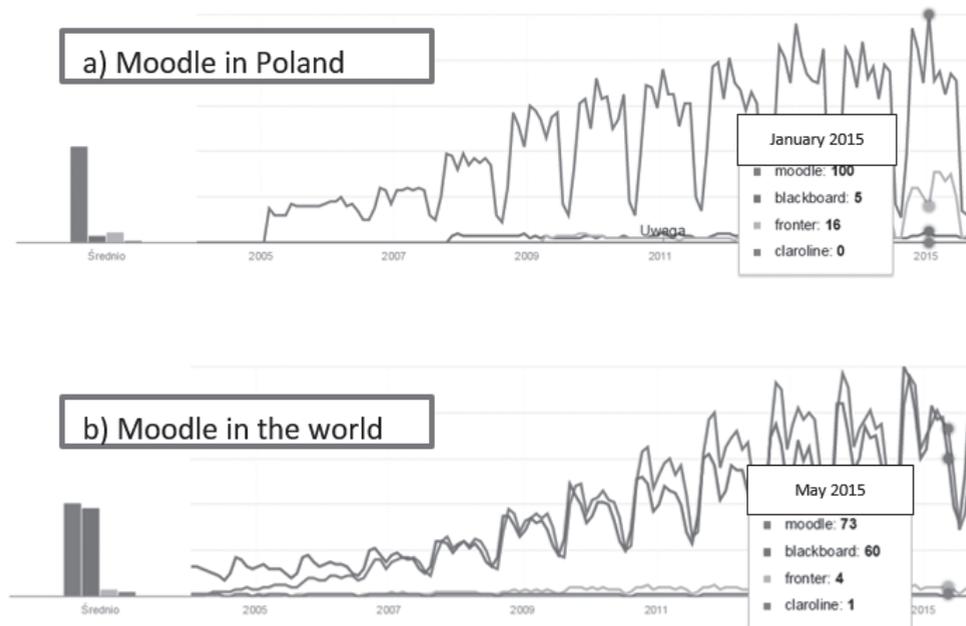


Fig. 2. Google Trends Analysis of the search volume of some e-learning platforms – Moodle, Blackboard, Fronter and Claroline in a) Poland, b) the world [9]

The Moodle platform provides a suitable and reliable system of logging, securing and managing its users – which in this case are teachers and students. It also offers a variety of authoring tools which enable an online didactic process. Thus we can develop, organise, deliver and manage didactic materials (in any text, graphic or even multimedia rich format), monitor the way in which these materials are used by students and teachers, and assess the effectiveness of online education with tests, surveys or assignments. The platform also makes it possible to run interactive classes by means of discussion forums (asynchronous communication) and chats (synchronous communication). Furthermore, it provides tools to run statistics and analyses of the didactic process.

Moodle was developed by Martin Dougiamas from the Curtin University of Technology, Perth, Australia in 1999. Currently, the platform, similarly to other open source solutions, is being further improved by its creator and hundreds of voluntary programmers all around the world. At the MoodleMoot Polska 2010 conference [10], Martin Dougiamas presented the latest version of Moodle, which assures us that the LCMS is constantly being developed, tested, and refined.

The Moodle platform undergoes continuous alterations so as to meet the demands of the constructivist model of learning. A range of tools have been developed to enable student/student and student/teacher interaction. These encompass over 35 activities, e.g. lessons, choices, surveys, chats, journals, forums, assignments, standard and Hot Potatoes quizzes, SCORM, glossaries, workshops, and Wiki. The tools offered by Moodle can be used to provide and/or test knowledge as well as to encourage interaction and/or collaboration among course participants.

The ability to integrate communication tools such as forums or chats with the content of lectures and tutorials and to supplement those with quizzes and tests assessing the progress of education can allow the teacher to develop and conduct an effective online course.

3.1. Tips for Moodle

1. To split the area of the course, or even a single topic into sections, you can use banners, collages or simply photographs that have been prepared earlier in another application, as shown in Fig. 3.

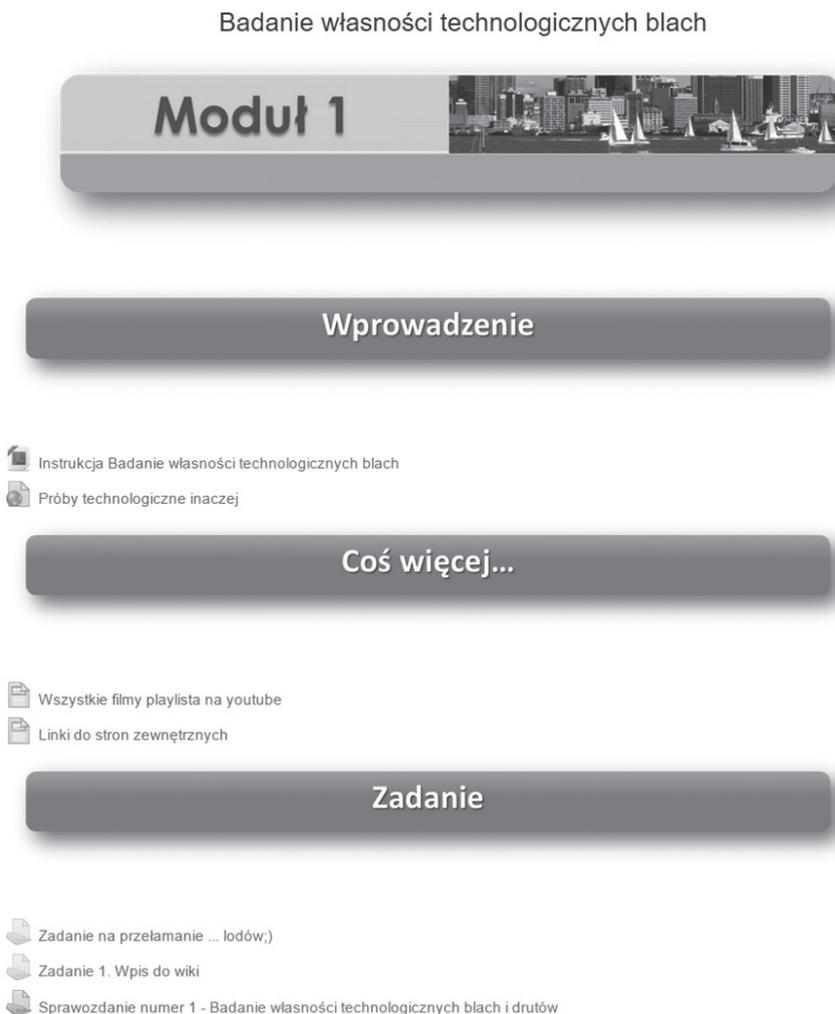


Fig. 3. One of the Moodle courses where banners and photographs were used to divide the topic into smaller areas: Introduction (Wprowadzenie), More... (Coś więcej), and Assignment (Zadanie). The scheme was copied into all topics

Organizacja	Moduł 1. Badanie własności technologicznej blach	Moduł 2. Badanie własności technologicznych drutu	Moduł 3. Cięcie
Komunikacja	Moduł 4. Wykrawanie	Moduł 5. Wytwarzanie wyrobów z proszków metali	Moduł 6. Tłoczenie
Moduł 7. Walcowanie	Moduł 8. Wyciskanie	Moduł 9. Kucie swobodne	Moduł 10. Kucie matrycowe

Fig. 4. Menu created in a course together with the **show one section per page** option of the **course layout**. All the cells in the menu are hyperlinks

2. One of the main disadvantages of learning with Moodle is the fact that courses are usually very long. It is quite frustrating to scroll down all the topics to get to the one that the student is currently working on. In one of the courses, we used the ‘show one section per page’ option in the course layout menu and created the table type menu to make all the topics available from the opening screen of the course. As a result, students can see the menu of the course and one topic only. They can still access other topics from the menu or the navigation toolbar. Our courses usually have the organisation and communication topics consistent for the entire course. The menu used in the course allows students to immediately access both of these (Fig. 4). The course was divided into the following modules:

 - Organisation (Organizacja),
 - Communication (Komunikacja),
 - Module 1. Tests of the technological properties of metal sheet (Moduł 1. Badanie własności technologicznych blach),
 - Module 2. Tests of the technological properties of wire (Moduł 2. Badanie własności technologicznych drutu),
 - Module 3. Cutting (Moduł 3. Cięcie),
 - Module 4. Blanking (Moduł 4. Wykrawanie),
 - Module 5. Powder metallurgy (Moduł 5. Wytwarzanie wyrobów z proszków metali),
 - Module 6. Stamping (Moduł 6. Tłoczenie),
 - Module 7. Rolling (Moduł 7. Walcowanie),
 - Module 8. Extrusion (Moduł 8. Wyciskanie),
 - Module 9. Open-die forging (Moduł 9. Kucie swobodne),
 - Module 10. Impression-die forging (Moduł 10. Kucie matrycowe).
3. We strongly advise our fellow authors to use styles and fonts proposed by the CSS designers. They are usually people who know trends, golden rules, best practices and they have the relevant aesthetic knowledge. Moreover, changing the Moodle themes (which can be done for a separate course) will result in an appropriate change of fonts, headings, and colours.
4. Moodle offers quite advanced ways to publish multimedia in the e-course area. We widely use images (available on creative commons licences or at the public domain), word maps, tag clouds (i.e. Wordle.net), or videos (Youtube.com, Vimeo.

com, TeacherTube.com, WikiVid.pl etc.). The main page of the Quality Tools course with graphic elements is presented in Figure 1 – this shows the tags cloud, also called a word map. Moreover, there are some nicely arranged images (e.g. the banner, which was prepared in PowerPoint).

3.2. Rapid Authoring Tools

Although Moodle is more than sufficient for the development, implementation, delivering and evaluation of an e-learning course, it is difficult to use in order to create multimedia, which would make the course visually attractive.

It is good if developers use built-in styles of the Moodle theme, using professionally designed cascade style sheets (CSS).

It is usually much worse when the authors experiment with colors, fonts, and the layout of course elements. It is not the intention of the authors of the article to discuss tastes, trends and people's personal aesthetic preferences; neither do they intend to recall any customer satisfaction examinations regarding the visual attractiveness of e-courses as it seems not to be the main aim of academic education. However, we will present a few selected tools and tips that allow teachers to 'spice up' their e-content, with virtually no additional work.

4. Review of the tools

All the problems discussed in the first part of this paper made the authors look for solutions which would allow them to swiftly publish e-content in a safe format. The conducted research revealed a wide variety of software known as Rapid E-learning Tools. The most user-friendly tools are able to convert content created in Microsoft PowerPoint (Open Office Impress), which is regarded by many teachers and academics as a standard tool, to the format appropriate for e-learning course.

The list below shows examples of such programs (free and commercial):

- Articulate Rapid e-Learning Studio (Articulate Presenter);
- Adobe Presenter;
- ProForm (Flashform) Rapid e-Learning Studio;
- AuthorPOINT;
- QuickLesson;
- FlashPoint;
- Wondershare PPT2Flash;
- Camtasia Studio;
- Impatica;
- PresentationPro PowerConverter;
- PowerPoint;
- OpenOffice.

Characteristic features of Rapid e-Learning Tools are as follows [6]:

- the time needed to prepare a resource is significantly reduced;
- e-content is prepared by experts in a given field, not a specialist in computer sciences, graphics or distance learning;

- preparation of an e-course takes place in the well-known and user-friendly environment of Microsoft PowerPoint (OpenOffice Impress) or with the help of ready-made templates;
- it is easy to monitor and assess progress as well as to provide feedback;
- they can supplement the course with simple multimedia elements (audio, video, animation) which enhance the process of learning, but do not create technological barriers;
- the course consists of reusable learning objects where each object constitutes an almost self-contained unit;
- learning objects can be used in various configurations which take from 20 to 60 minutes;
- synchronous (live) or asynchronous models of e-learning can be employed.

After the experience of developing multimedia lectures with Adobe Flash and testing trial versions of various programmes, a decision was taken to purchase Articulate Presenter and Adobe Presenter. The programs proved to be excellent tools for the rapid conversion to the SWF format of lectures prepared with Power Point or Open Office Impress; they also make it possible to add audio and video. Apart from the obvious fact that the time needed to prepare materials is decreased to just a few minutes, the application also offers a very interesting and functional interface for ready presentations (Fig. 5, 6).

5. Examples of the application

It has become routine and standard for academics and teachers to prepare all their lectures and other materials as PowerPoint presentations. Although PowerPoint presentations are very useful to use in the classroom where they can be presented using a multimedia projector and with the audience looking at a large screen, it is also very inconvenient to publish them in an e-learning course on the Internet. Therefore, we had looked for programmes capable of converting PPT files into SWF files. We have discussed in this paper why we chose the Flash format for our e-learning courses. From the review, we found two of the programmes to be most interesting: Articulate Presenter and Adobe Presenter. It is not the subject of this paper to review or describe them in detail. We have used both of them and found both to be very easy to use, the results were quite similar and very satisfactory. Below, one can see the results of the conversion of ppt presentations into .swf Flash files performed by Articulate Presenter (Fig. 5) and Adobe Presenter (Fig. 6).

The bar on the left in Fig. 5 and on the right in Fig. 6 shows a photo of the author and a brief note about him. Underneath, there are four links: table of contents (outline of the lecture), miniature slides (thumbnails), notes and a search tool. Below the main window (presentation area) there is a navigation menu with buttons for viewing, pausing, and fast-forwarding the presentation etc. Additional options are also available so that we can view notes prepared by the lecturer, see a slide without the side menu or enlarge the main slide with no menu in view. It is worth noting that the program is intuitive and retains all the animations and recordings that were included in the original PowerPoint document.

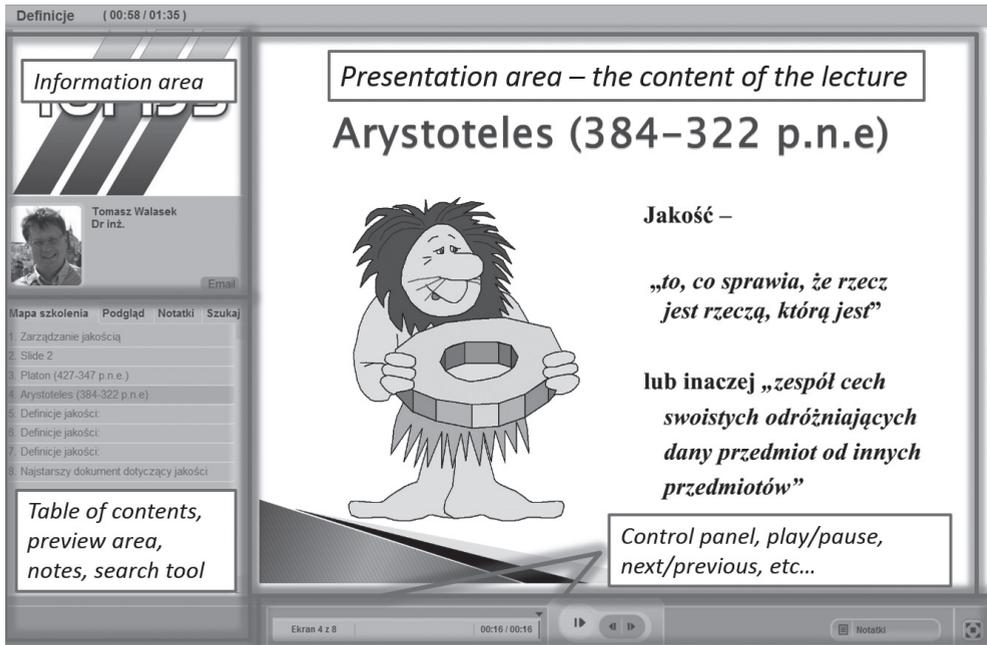


Fig. 5. One of the screens prepared in PowerPoint and converted into a multimedia presentation in Articulate Presenter

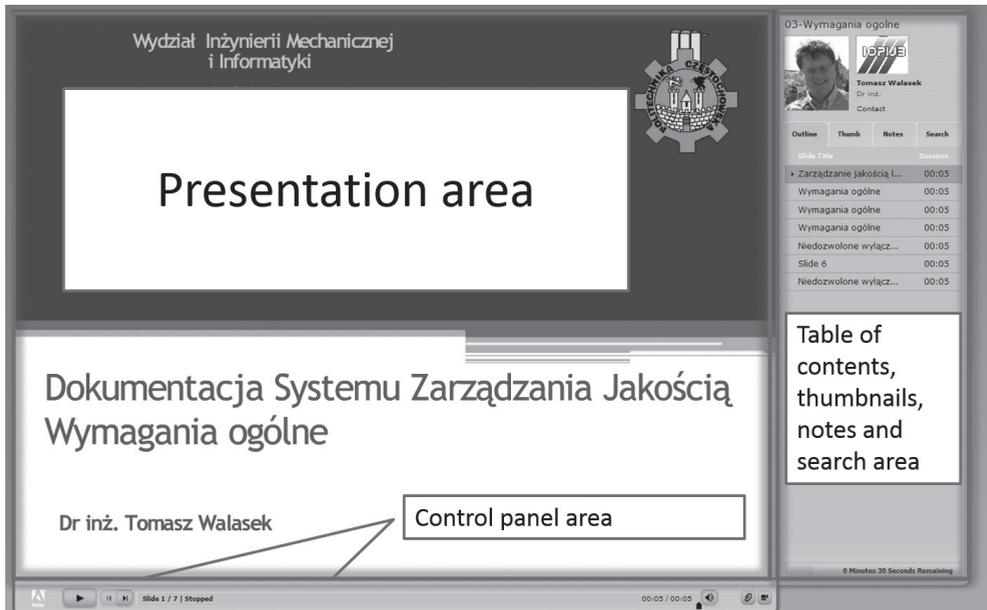


Fig. 6. The result of the conversion of the PowerPoint presentation performed by Adobe Presenter

Bearing in mind that the most common complaint voiced by e-teachers is the huge amount of time spent on preparing e-content, the authors can make assurances that the use of rapid e-learning tools significantly saves a significant amount of time. Most contemporary teachers are able to create, without any difficulties, a multimedia presentation in one of the two most popular programs (Microsoft PowerPoint or OpenOffice Impress) and they usually already have their lectures and teaching materials prepared in this way. Thanks to the tools discussed in the present paper, the conversion to the flash format and, consequently, making the materials more attractive and suitable for distance learning takes only a few moments, and this should be highly appreciated by all interested teachers.

6. Conclusion

The most problematic element of the e-learning process from the teacher's point of view is time management. The workload to prepare and conduct a course (which is annually updated and often refined with new teaching materials) as well as to assess and grade students' work is much greater compared to preparing and running traditional classes. The use of Rapid e-Learning Tools reduces the time needed to prepare an e-course to a significant extent and makes it possible to provide quick tutorials and other learning aids for students enrolled in the course.

The surveyed students appraised such a way of conducting classes very favourably and appreciated the availability of electronic lectures as well as the opportunity to complete tasks at times that are most convenient to them.

References

- [1] Allen I.E., Seaman J., *Learning on Demand, Online Education in the United States*, Sloan Consortium, Needham, MA, 2010.
- [2] Allen I.E., Seaman J., *Grade Level – Tracking Online Education in the United States*, Sloan Consortium, Needham, MA, 2015.
- [3] Dobrzański L.A., Brom F., *E-learning on the example of material science*, Journal of Achievements in Materials and Manufacturing Engineering, 29(1), 2008, 99-102.
- [4] Nogieć J., *Moodle functionality on the bases of Polish Higher Banking Schools students' opinion*, (in Polish), E-mentor, 1(33), 2010.
- [5] Walasek T.A., Kucharczyk Z., Morawska-Walasek D., *Assuring Quality of an E-Learning Project Through the PDCA Approach*, Archives of Materials Science and Engineering, Vol. 48(1), 2011, 56-61.
- [6] Walasek T.A., Kucharczyk Z., Morawska-Walasek D., *Some remarks on the methodology and e-learning tools used in the TQM course*, Journal of Achievements in Materials and Manufacturing Engineering, 44(2), 2011, 205-210.
- [7] Walasek T.A., Piątkowski J., Morawska-Walasek D., *Information Technologies supporting students' mobility*, Journal of Achievements in Materials and Manufacturing Engineering, 25(1), 2007, 83-86.

- [8] Zięba M., *Moodle on Management and Economics Faculty of the Gdansk University of Technology – case study*, (in Polish), E-mentor, 4(36), 2010.
- [9] <http://www.google.pl/trends/> (18-09-2015).
- [10] <http://moodle moot.pl> (18-09-2015).