ICT FOR CO-WORKING WITH OFFICE DOCUMENTS IN ECONOMICS STUDENTS' EDUCATION

L. Yordanova*, N. Angelova, G. Kiryakova

Faculty of Economics, Trakia University, Stara Zagora, Bulgaria

ABSTRACT

Knowledge and skills for co-working with office documents are base component of ICT competences for the economics students. As the tools for doing this are changed dynamically and continuously the study programs need to be updated very often. A very good approach for doing this is stepwise including of appropriate new topics connected with new ICT tools. In current work it is shared an experience with a subject taught to economics specialties in Trakia University.

Key words: open source software, document sharing, web based office services, OpenOffice.org, Google Docs

INTRODUCTION

Changes in social and political life require changes in the attitude and the requirements of people to obtain qualitative knowledge. Therefore, in the modern information society, knowledge is seen as a service aimed at a specific group of users motivated to choose where, when and how to acquire appropriate training in order to be more competitive. Progress and development of information and communication technologies (ICT) entails the need for acquisition and improvement of competencies and knowledge in the field of application. It is very important for the teachers to work with students to reveal their potential and to direct their attention to those knowledge that will help them in their future career. Specific competencies for economists are described with special regulations (1).

Besides the ability to deal with specific economic problems, to plan, assess risk, make financial statements, they must be motivated and open to continuous improvement.

In education, the main product is knowledge. One of the important features of the product is its price. In order the supply of quality knowledge to be accessible to a wider range of users, resources that allow reducing the cost of the end product should be used in the learning process.

Using modern ICT in the information society requires the selection of appropriate software for training purposes. When the market laws act against the economic crisis, the determining factor is the price.

A business model based on free software is applied recent years in the world practice. Small and Medium Business prefer the usage of alternatives to commercial operating systems and software packages not only because of the price. One advantage of the free software, mostly of open source software, is that other users can enhance the program and then re-distribute it under the same license. The use of such software in education enable students to explore alone its features and properties, to compare it with other standard programs that are already known to them. Open software stimulates creativity (2). So the students will obtain a custom evaluation criteria for the software and they will chose the right and appropriate one. This method of training will be beneficial to develop students' potential for lifelong learning.

*Correspondence to: *Lina Yordanova, Trakia University, Faculty of Economics, 6000, Stara Zagora , lina@uni-sz.bg*

OBJECTIVES AND STUDY
1. The ideas
The aim of this work is to present an approach for introducing the technology for sharing documents into the subject "Information networks, systems and technologies" taught to the students of Faculty of economics in Trakya University. This is a new discipline, that has taught by the Department of "Informatics and Mathematics" and it needs reform and updating of content. The development of modern ICT is a motivation for updating and modernizing this subject focusing on the learners themselves and the competence, they should have in their future career.

We consider the abilities to work with a shared document in real time as core competencies and training goal.

The tools for sharing office documents can be classified as two types: desktop applications and Web-based. The tools of first type need to be installed on the local machine, while the latter are available on the Internet and imply mobility and performance all the time and place.

One of our main goals is to direct students to use free software and acquire practical skills to work with it. Thus they are prepared to work in a business environment based on free products. This is why the curriculum is extended with extra teaching units connected with free software tools for sharing office documents of both types.

The first module is an example of co – working in local network with a spreadsheet in an office package OpenOffice.org (3). The second module is connected with knowledge of the capabilities of Google Docs (4). The objective of the first example, though simple, is the students to learn and understand the process of sharing documents. The second module carries the training into the web-based learning environment.

2. OpenOffice.org
OpenOffice.org is free software, a package of alternatives to MS Office. It is included in the curriculum of other subjects studied previously, where students work individually with a different file formats. Its main advantages are that it is free, easy to use and there are distributions of almost all languages, including Bulgarian. Its open source allows continuous updating and incorporating new features, making it widely applicable in education, business, government administration and among IT professionals. This package is used for developing other new packages (5). Good examples are LibreOffice and OpenOffice.Org Premium (6). The latter package includes extra features for consumers. It supports direct documents' export to LaTex, spell checking and hyphenation, additional fonts and new properties in Calc and Impress.

3. Web - based packages
Online applications for processing documents of different formats are developed very dynamically in recent years. They are easily accessible to Internet users and they are enriched with new functionality continually. Their biggest advantage is that they provide a repository for documents that is accessible from any computer. Most professionals who appreciate the qualities of this new web services, indicate the documents' synchronization, maintenance of different versions and sharing as major advantages over standard office packages (7). Users can upload and download versions of their documents from local computers. Most web applications of this type can be used by mobile devices.

Their main disadvantage is that some of their features are not fully implemented. Often consumers can not realize some task, because of lack of stable Internet connection.

Web-based office packages are particularly useful for the students' work. The students do not have to send created documents by e-mail or save to portable devices as the documents are available in the service repositories. Documents' sharing facilitates the work of groups with common projects. Thus, students gain experience for future teamwork.

Google Docs is a good example of online package for office documents, which was chosen for our work due to easy access and the great popularity of Google.

REALIZATION
1. Module I
Figure 1 shows the work window of the shared document, spreadsheet in OpenOffice.org. The emphasis here is not on the complexity of the calculations that could be performed in the work environment, but on the utilization of the process of sharing. Students work in teams of two and one is responsible for the content of the first worksheet and the other for the second and third. Each student tracks the changes made by other.
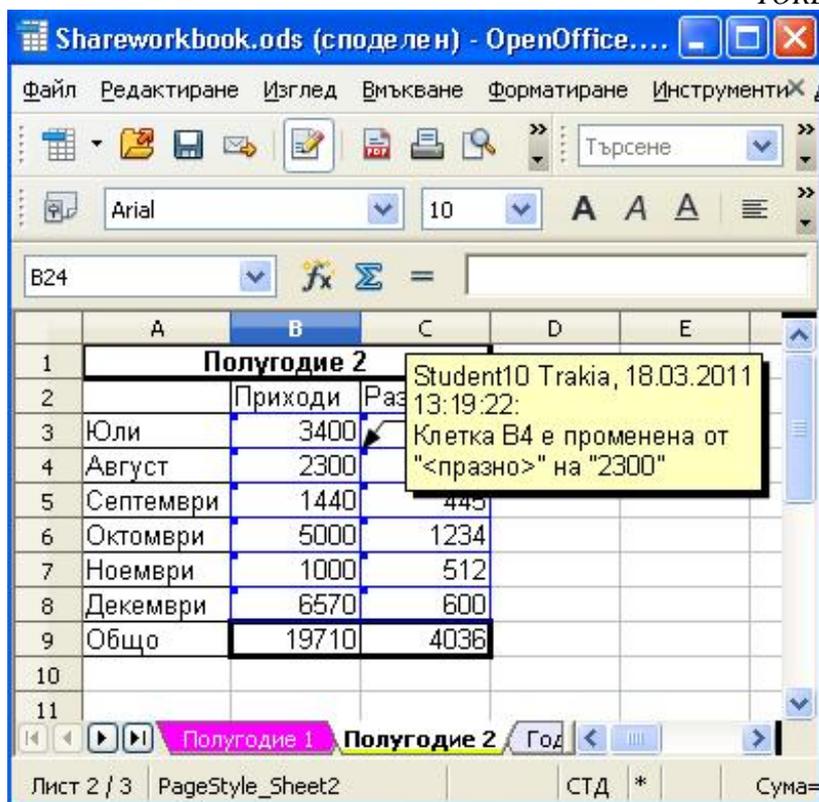
Figure 1. The work window of shared document in OpenOffice.org Calc with marked changes made by one user.

During the operation the students use a manual for sharing and viewing of documents in OpenOffice.org, printed on paper (8). Independently they perform the task with the help of this document. Team is responsible for the outcome.

As a result of solving such problems, students acquire skills for: sharing a spreadsheet, adding and editing comments on made changes, their consideration, acceptance or rejection. The students explore themselves the features of the product to merge documents, collating and storing their versions.

Sharing documents in OpenOffice.org is available only for spreadsheets and there are some restrictions on certain operations with the shared document such as inserting images, charts, merge cells, sorting and more. If it is necessary, the document is saved as unrequited, the operations are executed and then the document is shared again.

2. Module II
The next module of the course curriculum is the work with Google Docs. This enables students to share a text document, spreadsheet, presentation, graphic image and form. Applying the experience of working with office packages like MS Office and OpenOffice.org, they create a single document, store them and discuss options for editing, typical for this type of technology.

To be able to take advantage of opportunities offered by Google Docs, students are required to have registrations for Google services.

Initially the students create a new text document. Thus they could be assured that this online text editor in no way inferior to standard desktop applications they know. The operation is easy and convenient. There are standard menus, commands and buttons. It is possible to export files in various formats (odt, pdf, rtf, word, text, html zipped).

The advantage of Google Docs is the option for translation the document text in many languages, including Bulgarian.

In the process it was found impossible to open documents from odp format and files larger than 10 Mb, which can be considered as disadvantage of this Web-based office package.
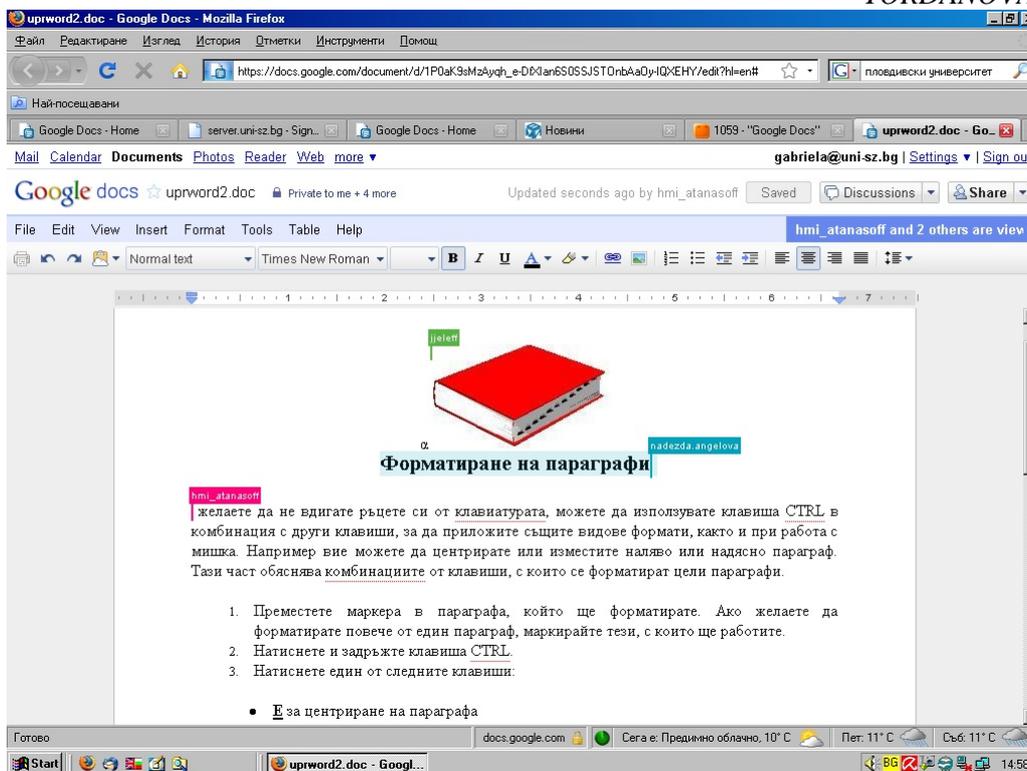
Figure 2. The work window of a shared document in Google Docs with the changes made by multiple users simultaneously

Documents sharing require explicit indication of the users who can work with it. They receive a notice via email. Access rights to the document are only for viewing or editing. In the latter case the customers are visible on the screen of the shared document with their respective markers, which appear as shown in **Figure 2.**

During the shared processing with the document users could use also the opportunity for online discussions. Therefore the synchronous communication between users is performed.

Besides text documents the students share presentations, spreadsheets, forms, graphics and link different documents, which are located in their local repository and other external sources. Working with a shared spreadsheet is more comfortable than in OpenOffice.org Calc. It does not require pre-storage changes from one user, but it is possible all users to work in parallel on the task. Online spreadsheets offer a variety of built-in functions, the possibility of creating charts, formatting and merging cells in order to perform various calculations, inserting pictures, comments, sorting and more.

Google Docs offers templates that can be used for different documents' formats. An opportunity is provided for users wishing to create their own gadgets and to send them in appropriate form to be published and accessible to all. This encourages creative thinking among users and contributes to the dynamic development of free software.

The users must be cautious with the available features for translation of documents because of the possibility of not very correct translation. The students were given examples.

The recommendation of some Internet resources for self learning was appropriate prior the studies. Students were interested in videos from YouTube called "in plain English" (9).

CONCLUSIONS
This work continues the long-traditions in the department of "Informatics and Mathematics" for including in the curriculum topics related to the usage of Free Software.

The proposed experimental units in the curriculum were met with interest from the students.

The approaches to its study are suitable and provide ideas for possible future use in practice. The assigned tasks lead to skills that would serve in the professional performance - to prepare a plan for a company presence on the Internet, explore the market, to design a business solution for the sale and purchase of business services.

REFERENCES

1. "Regulation № 4 4.12.2006 for acquiring professional qualification" Economist - manager ', with effect from 30.01.2007, MES, Prom. SG. 10 of 30 January 2007. , http://lex.bg/laws/ldoc/2135542666
2. Kiryakova D. N. Angelova, L. Jordanova, Free Software in Education, Proceedings of the international conference "Challenges for science in relation to Bulgaria's membership in the EU", Stara Zagora, 2007
3. Official site of OpenOffice.org http://www.openoffice.org/
4. Google Docs https://docs.google.com
5. "Several alternatives to Microsoft Office", http://www.livenews.bg/technology / s/100418636
6. OpenOffice.org Premium http://sourceforge.net/projects/ooop
7. "Alternatives to Microsoft Office - Part II" article http://sagabg.net/PCMagazine/-1091.html
8. "Chapter 11 Sharing End reviewing documents" http://oooautors.org/english/userguide3/published
9. "Google docs in Plain English" http://www.youtube.com/watch?v=eRqUE6IHTEA