

# SITUATION WITH E- LEARNING IN MACEDONIA

2011

The models of coordination and integration of activities should target individual users or groups, and not only the entities working on production of resources. This would imply creation of an online service or websites that would facilitate use of available resources.

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## General data on the conditions in Macedonia, computer and internet use

Data obtained from the research „Use of computers in the educational system of RM “<sup>1</sup> conducted in June 2010:

- 64% of the total population in the Republic of Macedonia PM at the age of 10-65 has a computer in the household. 89% of them have internet access in the household, which is about 58% of the total population in Macedonia at the age of 10-65.
- 57% of the total population in Macedonia at the age of 10-65 is using a computer, out of which 78% are using a computer on a daily basis.
- Most of the computer users are using a computer at home – 84%, 6% use a computer at work, 4% in an internet café, 3% use a friend's computer and 2% are using computers in schools or faculties.
- 53% of the total target population in Macedonia at the age of 10-65 is using the internet. Most of the internet users in regard to the average age are users from the younger population (in elementary – 85% and secondary schools – 96%, as well as students – 96%).
- Most of the users – 79% are using the internet on a daily basis, 17% are using the internet at least once a week, 3% are using the internet at least once a month.
- 82% of students in elementary and secondary schools have the opportunity to use a computer in school.
- Most of the students – 43% are using a computer as part of their classes several times a week, 29% are using a computer at least once a week, whereas only 16% are using a computer on a daily basis. Students in secondary schools are using a computer as part of classes on a daily basis in a greater percent than average – 30%, and computers in elementary schools are being used as part of classes in a greater percent than average at least once a week - 29%.
- Only 18% use the internet during their classes on a daily basis, 37% use it several times a week, 28% use it at least once a week, 10% use it less than once a week, and 7% do not use a computer as part of their classes.
- During their classes, 61% of the students from elementary and secondary schools are using computers, i.e. the internet for frontal tuition, 64% for group tuition, 58% for individual work during the class, and 67% for working on projects.

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<sup>1</sup> The research “Use of computers in the educational system of RM” was conducted within the framework of FOSIM's program: EU policies and Macedonian education. The research was conducted by: IPSOS Strategic Puls and Radmila Zhivanovikj, and published by the Metamorphosis Foundation.

- 13% of the students in elementary and secondary schools never use the internet to search for websites to obtain additional information about the learning material, 59% are using it sometimes, and 27% regularly use the internet for this purpose.
- In order to communicate with other students about the learning contents via e-mail, chat, Skype..., 26% of the students never use the internet, 44% are sometimes using the internet and 30% regularly use the internet.
- In order to communicate with teachers about the learning contents via e-mail, chat, Skype... 64% of the students never use the internet, 29% are sometimes using the internet and 7% regularly use the internet for this purpose.
- The internet as a method for exchange of knowledge related to the learning contents through participation in various blogs, online discussions, school website, forums...is regularly used by 9% of the students from elementary and secondary schools, 34% are sometimes using the internet, and 55% of the students never use the internet for this purpose.
- 67% of the users at the age of 10-65 in Macedonia believe that there are sufficient contents online in their mother tongue. 83 % percent of the respondents at the age of 10-14 (significant variation from the average) believe there are sufficient contents online in their mother tongue since their intellectual and educational needs for such contents are not as big as the needs of the respondents at the age of 20-39, who need more contents in Macedonian language and according to this part of them (39% at the age of 20-29 and 38% at the age of 30-39) believe that there are no such contents online. This is due to their increased need for appropriate contents in Macedonian and as we can see this need is defined by the age, education and profession of the respondents. According to this, the Student and the Employss have a greater need for such contents but do not find them in the necessary quantity and quality.

These conditions are directly related to the possibilities, capacities and needs for e-learning in the Republic of Macedonia.

## Introduction

Availability of educational contents and educational aids and tools (hereinafter: educational resources or ER) is often limited due to a series of practical systematic and financial problems.

Problems that emerge in regard to the use of educational resources mainly concern the restrictive use thereof, i.e., the limited use of educational resources by smaller groups or individuals. As for availability of electronic educational contents, it can be said that they are modest, both in terms of their scope and quality. Interconnection of actors in the education process is still on low level.

Education's inclusiveness and freedom to use educational resources provide enough space for improvements and further development. Similarly, on-line databases, electronic educational contents

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and open source software for education – in their current capacity – fail to make full use of their system abilities. OER gain in importance given that Macedonia is a country in development and is characterized by a high poverty rate and thus requires higher rate of utilization of open resources and free educational tools and contents. The inclusiveness and openness promoted and practiced by the Internet, as well as by new information technologies, are insufficiently and inefficiently applied in education, although global education bases its reform process on the intensive use of information technologies and Internet. In that process, the number of digital materials that support education and scientific-research activities is rapidly growing. Nevertheless, the existing system is faced with the inability to channel and impregnate such newly generated resources.

The OER concept is built on the basis of David Wiley<sup>2</sup>'s term "open content"<sup>3</sup>, promoted by the end of the 20<sup>th</sup> century. Wiley's syntagma expanded the idea on the active connection between the principles underlying the open source software movement<sup>4</sup> and the movement advocating for open contents, in particular educational contents. Wiley actively participated in the creation of the broadly accepted open content license "Open Publication Licence". The establishment of *Creative Commons* in 2001 as a manner of defining an entire platform of copyrights that enable and facilitate content-sharing, and the MIT initiative "OpenCourseWare (OCW)" for free Internet access to most of their manuals paved and enhanced the OER movement. In 2005, the OCW model was adopted and replicated by a growing number of institutions, whose number in 2008 accounted for more than 180 members worldwide, all dedicated to OER and included 4.000 manuals and courses. The University of Texas' project "The Connections" is also quite developed and expanded<sup>5</sup>.

The term OER was first used in 2002 at the UNESCO conference, where OER were conceptualized as "open access to educational resources, supported by Information and Communication Technologies, for non-commercial consultative, applicative and adaptive goals". In more conventional terms, today OER mean "digitalized materials offered for open use by teaching staff, students and self-thought individuals or groups, for the purpose of teaching, learning and research". On the European continent, the European Union (EU) plays the main role in this process, notably by means of its project OLCOS<sup>6</sup> (Open eLearning Content Observatory Services), which is part of the EU e-Learning Program. This project aims

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<sup>2</sup> <http://davidwiley.org>

<sup>3</sup> Wiley, D. (1998), "OpenContent".

<sup>4</sup> „Open source software movement“ (англ.).

<sup>5</sup> According to D'Antoni and Savage, 2009, pp. 10-11: "The Connexions project of Rice University in Texas has two components. The Content Commons component offers collaboratively developed material that can be modified for any purpose. The second component comprises FOSS tools to help students, instructors and authors manage the information available in the Content Commons. Faculty from all over the world are contributing to and using the materials in the Content Commons, especially in the areas of engineering and music education".

<sup>6</sup> [http://www.olcos.org/cms/upload/docs/olcos\\_roadmap.pdf](http://www.olcos.org/cms/upload/docs/olcos_roadmap.pdf)

to “create an information on-line centre that would promote, create and use OER concepts, in particular *open digital educational contents (ODEC)*<sup>7</sup> (Poposki 2010: 5-6)<sup>8</sup>.

In typology terms, OER include:

- **educational contents:** curricula, courses, teaching digital contents, ranging from textbooks, manuals, workbooks, teaching plans, modules, tests, video materials to inventories/collected works, journals, and like;
- **educational digital databases** (the so-called learning objects);
- **education tools:** these include software to support the development, use, preparation of educational contents, as well as tools aimed to generate contents and create on-line communities in the field of education;
- **copyrights:** creation of copyright licenses that would promote open publication of educational materials;
- **open and free courses and training.**

As for the precise definition of “openness” and its use, one should note that it primarily refers to the categories: (a) access to; and (b) availability of educational materials and tools for users.

must note that the education process - as analysed in this document – includes formal education, both public and private, scientific and research work and informal education. The emphasis was put on the resources, their scope, quality and availability, whereas the segmentation of their further use, education levels and different forms are subordinated to these findings. For the purpose of adjusting the conceptual framework of the research subject, in the case of the education system in the Republic of Macedonia, OER were defined as follows: “OER are public resources for teaching, learning and research, available under copyright licenses that enable free use by other persons”<sup>9</sup>.

## Advantages of e-learning

It is important to emphasize some of the advantages of e-learning:

- Saving on costs for travel to the venue of the event. This is important also because the participants during this period are separated from their families and their productivity after they return may be reduced, because they would need time to “get back” to normal.

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<sup>7</sup> Open Digital Educational Content (ODEC).

<sup>8</sup> The project is implemented by a Consortium composed of 6 institutions from 5 European countries: Fernuniversitaet in Hagen, Germany, European Centre for Media Competence, Germany, European Distance and E-Learning Network, Hungary, Mediamasteri Group, Finland, Open University of Catalonia, Spain, Salzburg Research Forschungsgesellschaft, Austria.

<sup>9</sup> According to the model of *Rossini* 2010, pg. 18.

- Saving on costs for a training venue. When one invests in e-learning software, for instance, in Macedonian language, it is a one time investment. Internal trainers then work on the program part of learning. There are no additional costs when studying the same contents and training again, when you would otherwise have costs for rent, refreshments, lunch, hotel etc.

- Costs for training planning and organization. It is truly energy and time consuming to organize a training for which everyone is available, when everyone can be separated from their everyday work, and not to be only present physically at the training.

Here we can also add a great number of advantages such as protection of the environment, because the materials are not printed, the progress of the participants is monitored, opportunities for opening discussion forums, creating tests for knowledge etc.

We can conclude that e-trainings enable cost savings and are a reasonable solution for every company. There are more advantages than disadvantages and an individual research should be conducted on a company level regarding the amount of costs saved, the time for return of investment, in order to reach the proper decision for the appropriate type of e-learning.<sup>10</sup>

## The situation in Macedonia

As part of the education process “computerization and digitalization of education has been intensively developed in the period after 2002, when the first donation from China was received and enabled a certain degree of mass use of ICT at primary and secondary schools.....in 2005, the relevant institutions and expert working groups were established and started the implementation of the National Program on Education Development 2005-2015<sup>11</sup>, the Draft Program on ICT Development in Education (2005-2015), the National Policy on Information Society and the National Strategy on Information Society Development<sup>12</sup> which encompass the process of computerization and digitalization of education”<sup>13</sup>. Although marked by variable results, obvious is that “the process of intensified<sup>14</sup> and mass use of ICT in education”, which clearly paves the development of education in the Republic of Macedonia (for more see Zivanovik 2010: 03-15). The project “Computer for Every Child” of the Government of the Republic of Macedonia<sup>15</sup>, implemented in coordination with the Ministry of Information Society (MIS) and Ministry of Education and Science (MES), anticipates the installation of

<sup>10</sup> <http://www.statija.mk/archives/1378> Afrodita Kermichieva Panovska, founder and owner of the training center CS Global.

<sup>11</sup> <http://www.npro.edu.mk/dokumenti/strategija-mk.pdf>

<sup>12</sup> [http://www.mio.gov.mk/files/pdf/dokumenti/Strategija\\_i\\_Akcionen\\_Plan.pdf](http://www.mio.gov.mk/files/pdf/dokumenti/Strategija_i_Akcionen_Plan.pdf)

<sup>13</sup> Zhivanovikj 2010, pg. 3.

<sup>14</sup> Ibid.

<sup>15</sup> Period of implementation 2006-2012, according to data from the Ministry of Information Society

100 000 computers at all primary and secondary schools throughout the country in a period of 6 years, as well as provision of software tools for school subjects, acquisition of ICT skills, interactive on-line teaching and interactive teaching and assessment methods.

Nevertheless, the entire process of OER implementation is impossible without the relevant infrastructure in place because projects that target infrastructure progress open possibilities for adherent use of OER.

It has been perceived that the state of affairs related to copyrights in the Republic of Macedonia<sup>16</sup> is unfavourable as concerns the adherent application of OER concepts. In Macedonia, educational materials, textbooks, manuals, research, scientific publications and like are almost always published under fully protected copyrights and intellectual property rights. Printing and distribution thereof are subject to same regulations that govern commercial products, whereas multiplication has been stipulated in detail with the view of protecting author's copyrights: *"the law allows natural persons to make maximum three copies of an authored work for private use, for direct and indirect non-commercial purposes"*<sup>17</sup>. Moreover, the relevant legislation stipulates other terms and conditions for limited reproduction of such contents:

- *non-commercial reproduction of authored works in maximum three copies is allowed in the following cases:*
- *for scientific purposes, in scope justified by the purpose of use; and*
- *for use by disabled persons, provided that the use in question is directly related to their special needs*<sup>18</sup>.

Finally, another important factor that determines the need for OER and their implementation is the poverty rate in societies where OER are applied. Countries with high poverty rate are marked by an urgent need for OER development and application, primarily due to the fact that OER stimulate development and mitigate social differences, but also provide equal opportunities for life sustaining and social prosperity. "Access to knowledge is crucial for innovations, and innovations are crucial for development"<sup>19</sup>. According to SSO data, in 2009 the share of poor people in the Republic of Macedonia accounted for 31.1%.

In conclusion, reference can be made to Rossini's findings<sup>20</sup>: "open systems are a better model on the use of funds, since they enable better use, reuse and adaptation of recourses for the purpose of addressing inequalities", both in geographic and social terms.

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<sup>16</sup> Regulated with the Law on copyright and related rights, Official Gazette of the Republic of Macedonia No.23/05 from 12.04.2005.

<sup>17</sup> Law on copyright and related rights, Article 42.

<sup>18</sup> Law on copyright and related rights, Article 46.

<sup>19</sup> Rossini, 23.

<sup>20</sup> pg. 29.





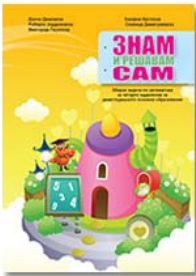





Prior to considering the state of affairs as regards OER in the Republic of Macedonia, it is useful to determine the term “open access” (hereinafter: OA) as closely related to OER. “Open access materials are digital and on-line materials that can be used free-of-charge and free from restrictions as regards the copyrights and individual property rights”<sup>21</sup>. OA is a result of combining the effects of Internet on the education and the open source software movement. In essence, OA advocates easy and free access to scientific and educational works published on the Internet and is promoted as an efficient “model for knowledge distribution”<sup>22</sup>.

On 21 April 2010, the Ministry of Information Society promoted the project on free e-textbooks and the relevant **website e-ucebnici.mk**. 58 textbooks in Macedonian, Albanian and Turkish languages have been uploaded on the website and their contents are subject to free overview and browsing<sup>23</sup>.

“Electronic publications enable students at any time and place to master the learning contents in an innovative and interesting manner, while teachers – by using the information technology – can prepare and present them”<sup>24</sup>

**Книги за основно образование**

 <p>Türkçe kitabın - 1 Автор: Osman Emin; Sevin All Превземи ја книгата</p>	 <p>Türkçe kitabın - 3 Автор: Превземи ја книгата</p>	 <p>Gjuha shqipe - 4 Автор: Zihni Osmani; Fejzi Voju Превземи ја книгата</p>	 <p>Gjuha shqipe - 4 Автор: Rita Petro; Natasa Perivani Превземи ја книгата</p>
 <p>Збирка по математика - 4 Автор: Превземи ја книгата</p>	 <p>ЛИКОВНО ОБРАЗОВАНИЕ за IV одделение Автор: Превземи ја книгата</p>	 <p>МАКЕДОНСКИ ЈАЗИК за ЧЕТВРТО ОДДЕЛЕНИЕ Автор: Превземи ја книгата</p>	 <p>МАКЕДОНСКИ ЈАЗИК за ЧЕТВРТО ОДДЕЛЕНИЕ Автор: Весна Настовска; Љубица Севдинска</p>

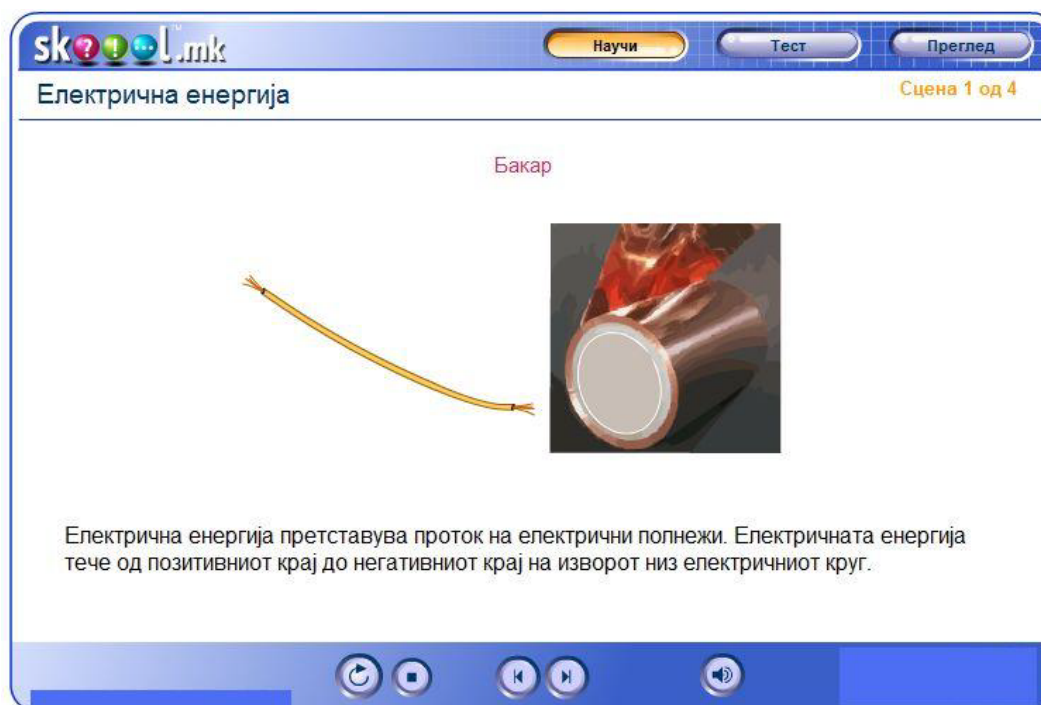
<sup>21</sup> Suber 2007 quoted in Poposki 2010, 12.

<sup>22</sup> According to Rossini, 23.

<sup>23</sup> The search is limited to name of schoolbook and author.

<sup>24</sup> Ministry of Information Society

The website *skool.mk*<sup>25</sup> is a complementary project developed by the MIS and the Bureau for Development of Education (hereinafter: BDE), which is part of the network *skool.com*<sup>26</sup>. The website provides tools and contents in the field of mathematics, physics, chemistry and biology. It includes interactive audio and video materials that can be applied in the instruction process and contribute to creative presentation of relevant lessons in these subjects. The contents offered target the said subjects in primary and secondary education, and are closely related to the official curricula for these subjects. The website offers concise notes for users in the field of mathematics and natural sciences.



New media and the so-called *Web 2.0* open broad space for creative use of digital tools and free services and resources. In this context, one can notice the enhanced use of these means for innovations and creative approach in the education in Macedonia. Teachers with certain computer literacy more frequently utilize the possibilities offered by the Internet and new media. For illustration purposes, following are some mini-projects of this type implemented as individual or group efforts:

<sup>25</sup> <http://skool.mk>

<sup>26</sup> <http://skool.com>

- **e-uciliste**<sup>27</sup> is on-line collection of education courses in several subjects: IT, physics, chemistry, electrical engineering, digital systems, HTML, etc. This collection of resources is based on the *Moodle*<sup>28</sup> concepts. *Moodle* is a course management system (CMS), also known as “Learning Management System – LMS”, or “Virtual Learning Environment – VLE”. It is a free web-based application that is open and free for use, for the purpose of developing educational contents as part of education websites. Joining this system and obtaining a user account is open and free. The website contains guidelines and mini-courses on website and quiz design, protection thereof, creating video lessons, and other useful elements and information. *e-uciliste* has around 800 registered users. The *Moodle* platform proved to be convenient for developing educational contents and courses, but its potential remains underutilized in Macedonia. *e-pedagog*<sup>29</sup> is a related project, anticipated as a platform for exchange of experiences and e-materials in the field of pedagogy<sup>30</sup>.
- The creator of **e-uciliste** also created the **e-dnevnik** (electronic gradebook) implemented at the secondary school “Riste Risteski – Ricko” in Prilep. The *e-dnevnik* enables parents to have insight in their children's grades throughout the school year<sup>31</sup>. *forum.e-uciliste* operates as part of this project, and aims to exchange opinions and discussions, while *e-uciliste* enables external assessment. According to the creator, “the forum aims to grow into a forum for all secondary schools in Prilep, and then in Macedonia”. The projects are licensed under *Creative Commons*, under the Attribute-Share Alike license.
- Textbooks in the subjects “IT” and “IT projects” at the primary school “Straso Pindzur” in Negotino illustrate an education project hosted on the **Wiki platform**<sup>32</sup>. This project includes free electronic textbooks that can be downloaded and used, information for students and parents, coordination of activities, guidelines and manuals, etc. The project’s creator uses

<sup>27</sup> <http://www.e-uciliste.com>, with administrator prof. Vlatko Butleski, interview for it.com.mk:

<http://it.com.mk/da-go-napravime-uchilishteto-podobro-mesto-za-uchenje-2/#ixzz16WJSfO70>

<sup>28</sup> <http://moodle.org>

<sup>29</sup> <http://e-pedagog.com>

<sup>30</sup> [http://e-pedagog.com/index.php?option=com\\_content&view=section&layout=blog&id=4&Itemid=19](http://e-pedagog.com/index.php?option=com_content&view=section&layout=blog&id=4&Itemid=19)

<sup>31</sup> “With the e-diary parents can check and see the grades of their children at any time as well as their absences from classes. A high degree of protection is provided. Parents can access the data only with an appropriate password, which is unique for every student. Another person cannot access the data. The e-diary as a project, which is the first of this kind in Macedonia is yielding excellent results. It was created by me and Vasil Zidrovski, former student in the school, now a student of technical informatics in Bitola and Valentin Ambaroski was responsible for the design. Daniel Daskaloski helped us with hosting during the project duration. Aside from the benefits for the parents, this was also the case with the administrators, pedagogue, principal, accountant, who were provided with an insight into various data used for analyses” - Vlatko Butleski, January 15 2010, Nova Makedonija.

<sup>32</sup> <http://informatika-osnovno.wikispaces.com>

resources from blogging platforms in order to interact with students and parents, but also in order to issue the school electronic bulletin<sup>33</sup>.

As for the coordinated activities of the MES, the BDE and the MIS, one should indicate the transfer from *Windows OS* (operating system) to *LINUX-Edubuntu*, which is free and open OS.

Also, as part of OER<sup>34</sup> efforts, the website **ToolBox**<sup>35</sup> was developed, and according to its creators represents “a collection of instruction materials for the 21<sup>st</sup> century”. The website also hosts an e-archive comprised of specialized textual and video materials in the subjects: mathematics, chemistry, physics, biology, geography and technical education. Video materials are uploaded on the *YouTube* service where PPE hosts its own channel<sup>36</sup>.



Digitalization of educational contents is anticipated as part of the Government’s project “Computer for Every Child<sup>37</sup>” implemented by the MIS and the MES at all public primary and secondary

<sup>33</sup> <http://strasopindzur.wordpress.com>, <http://evesnik.wordpress.com>

<sup>34</sup> <http://www.pep.org.mk>

<sup>35</sup> <http://toolbox.pep.org.mk>

<sup>36</sup> <http://www.youtube.com/user/usaidpep>

<sup>37</sup> The project Computer for every child is implemented in three phases: procurement and installation of equipment, maintenance, local and internet connection of the equipment as well as development of digital educational contents and training of teachers for performing computerized tuition (Ministry of information society, 2009). The project was launched in January 2007 and is projected to be implemented until 2012, MIO.

schools and stipulated under the National Program on Education Development 2005-2015. Digital instruction materials aim to:

- *stimulate students' interest in the subject;*
- *assist students to memorize facts from the curricula;*
- *facilitate comprehension of lessons;*
- *trigger desire for individual research.*

(MIS, 2010: 7)

According to the MIS, e-contents should be uploaded to a central location or server and can thus be downloaded from any location, either at or outside school premises. Implementation of the above listed projects is at different level of progress (in terms of technical aspects or contents).

The Government of the Republic of Macedonia is in the procedure of announcing an open call for e-contents in six subjects from primary and secondary education, those being: history, geography, mathematics, physics, chemistry and biology, in four languages of instruction: Macedonian, Albanian, Turkish and Serbian. According to the MIS, it has been anticipated for the first stage of the project to target digitalization of 30 lessons in primary and 50 lessons in secondary education for all six subjects given above. According to the same source, this is only part of the overall plan and goal on “full digitalization of all subjects in education and development of e-contents adjusted to students’ age group and to the relevant curriculum”<sup>38</sup>.

As part of the *Intel* donation worth 15 million USD, as referred to under point 5.4., and by means of the website *skool.mk*, the Government received four digitalized curricula (in mathematics, chemistry, physics and biology) and training for lower primary teachers (1<sup>st</sup> to 3<sup>rd</sup> grade) on work with *Classmate* laptops<sup>39</sup>.

USAID is the partner of the MIS as regards the development of e-courses on “e-ucenje<sup>40</sup>”, which is part of the project “e-Government<sup>41</sup>”. This e-course is free and open for all stakeholders. The project is in its early stage and for the time being there are no developed materials available for use. The course

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<sup>38</sup> According to Ivanovski, the new legal amendments also require every schoolbook to be digitalized and to have a CD-ROM at the back cover. Each author will have to develop electronic content cooperating with a Macedonian IT company and then apply for selection to the Ministry of Education and Science“, Ivo Ivanovski, MIO, January 21, 2010.

<sup>39</sup> October 2009, Ministry of Information Society

<sup>40</sup> <http://www.ucenje.org.mk>

<sup>41</sup> <http://www.egov.org.mk>

database<sup>42</sup> has been uploaded to the website of the first project on ICT in education “Portal for Primary and Secondary Schools”<sup>43</sup>.

As part of the MEC Project<sup>44</sup> (Model for efficient communication between the Commissions for Interethnic Relations and the Citizens) implemented by the Metamorphosis Foundation and the Citizens' Association Common Values, e-learning contents (available for all) have been developed. To be more specific, the online courses<sup>45</sup> cover elaborative topics in the field of IT skills, human rights and competences of the Commissions for Interethnic Relations and public and media relations. These are multimedia courses and contain assistive presentations and quizzes for knowledge testing.



As part of the initiative of the Metamorphosis Foundation for increasing e-learning content, the website [www.e-learning.org.mk](http://www.e-learning.org.mk) was created within the framework of the project “Inciting local e-content” intended for self-education in the area of blogging and use of social media for promotion. With these courses users can educate themselves about blogging and social media (Facebook) and about the services for sharing presentations (Slideshare) and photographs (Flickr).

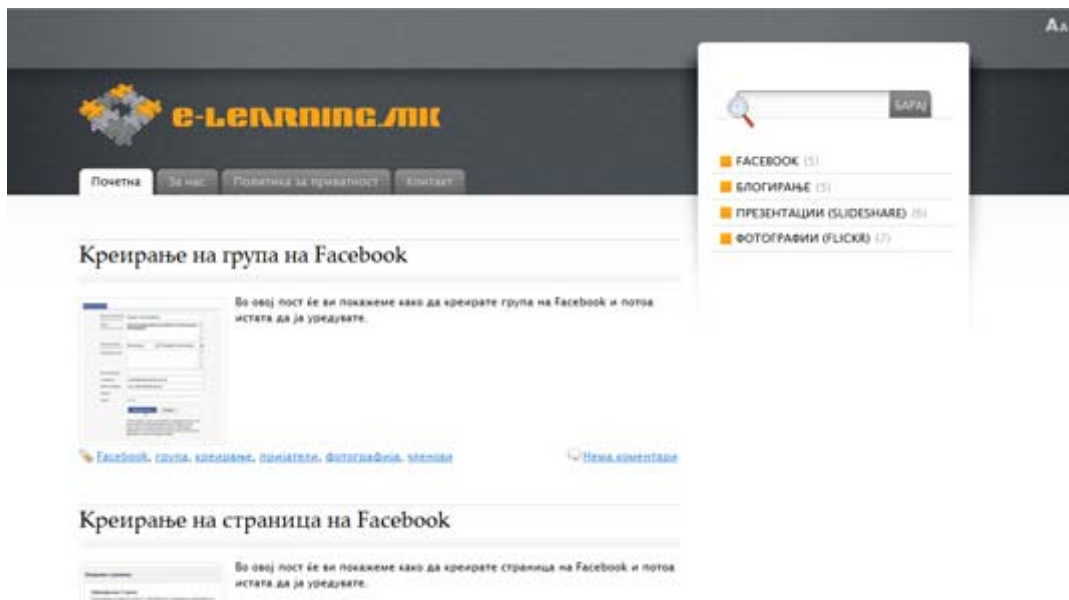
<sup>42</sup> <http://courses.schools.edu.mk/pdf/index.html>

<sup>43</sup> <http://schools.edu.mk>

<sup>44</sup> <http://mek.mk>

<sup>45</sup> <http://mek.mk/mk/e-ucenje/e-kursevi>





Another example for an institution using the concept of e-learning is the e-learning centre<sup>46</sup> at the University "Goce Delcev" in Shtip which has been using the Moodle e-learning platform since 2007. So far, the platform has 7,100 users, 240 of which are professors, assistants and laboratory assistants, and the others are students at the "Goce Delcev" University in Shtip. Four hundred courses have been created on the platform and these are active courses, i.e. the creators of the courses regularly control their courses in terms of contents, activities and students attending those courses. These courses are available for the students and employees of this university, since login to the service is possible with an e-mail address of the university.

<sup>46</sup> <http://elc.ugd.edu.mk>

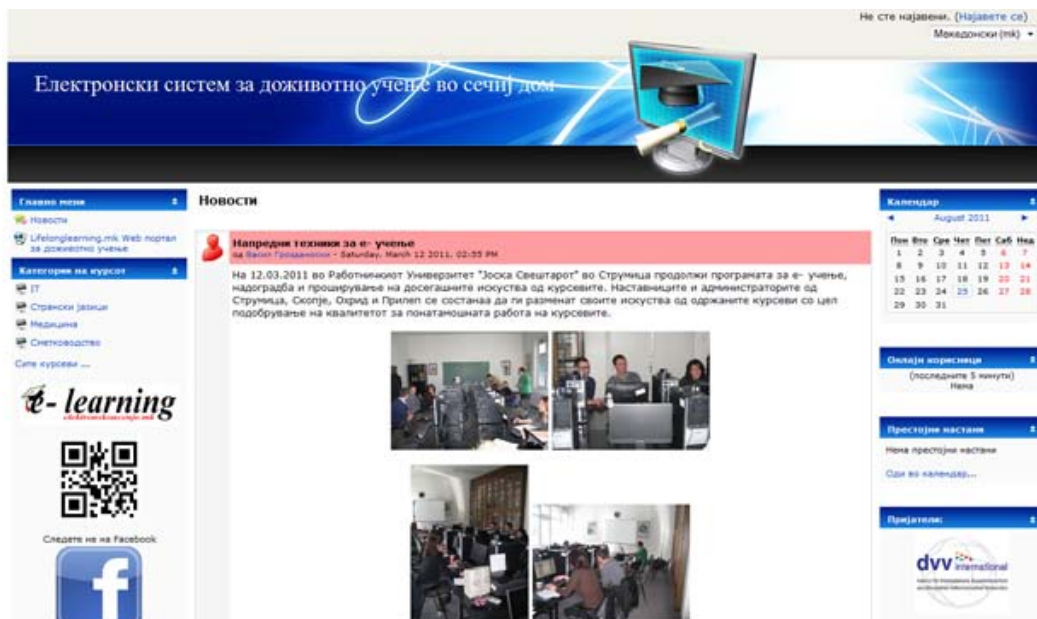
The private university FON also has an e-learning system<sup>47</sup> which is closed for public use, i.e. it is limited to the employees and students of the higher education institution who log in using their university e-mail address in order to use the e-learning system.

Категории на курсот	Број
ФОН Е-учење	2
Општи курсеви	5
Фабрика на знаење	11
Факултет за информатичко-комуникациски технологии	
Прва година	16
Втора година	19
Трета година	23
Четврта година	14
Петта година	12
Општи курсеви	6

<sup>47</sup> <http://learning.fon.edu.mk>



In December 2010, the Workers' University "Pere Toshev" from Prilep began with the realization of online courses for lifelong e-learning with a pilot project of DVV International<sup>48</sup>, available at <http://elektronskoucenje.mk>. The courses are in the field of IT, foreign languages, medicine and accounting.



In September 2010, the modules for the customs and e-business (e-learning) studies were officially promoted<sup>49</sup> in the Customs Administration whose purpose is to contribute to a better and more efficient application of the Laws on customs, and for compliance and simplification of the customs procedures. The use of the e-courses is free and all the e-learning courses are available on the website of the Customs Administration<sup>50</sup>.

<sup>48</sup> <http://www.rutosev.com.mk/on-line%20ucewe.html>

<sup>49</sup> <http://www.delmkd.ec.europa.eu/mk/bilateral-relations/eu-assistance/stories%20from%20the%20field/24%20E-learning-customs.htm>

<sup>50</sup> <http://www.customs.gov.mk/DesktopDefault.aspx?tabindex=0&tabid=312>

Република Македонија  
ЦАРИНСКА УПРАВА

Почетна | За нас | Патници | Деловна заедница | Контакт | Мапа на сајлот

Пребарување:

### Курсеви за е-учење во областа на царината

Комбинирањето на електронското учење заедно со другите форми на учење станува сè поважно во делот на обуките, како во Европската унија, така и во Република Македонија. Европската комисија ги развива курсевите за области од зграднички интерес во соработка со сите Царински управи и со претставници на трговијата.

Важните курсеви придонесуваат за подобра примена на царинското законодавство и обезбедуваат хармонизирање и подолноставување на царинските постапки, како и нивова униформна примена на целото царинско подрачје на Република Македонија. Курсевите имаат за цел да бидат користени од многу царински службеници, како и од претставници на деловната заедница. Овој нов пристап во обуката и стручното оспособување овозможува постојано покривање на повеќе области од зграднички интерес за учесниците во царинската постапка, не создава никакви трошоци, бидејќи неговото користење е бесплатно и претставува практичен пример за олеснувањето на трговијата.

Овде можете да пристапите до курсевите за е-учење од областа на царината

- Регистрација и идентификација за економските оператори (EORI)
- ДДВ Директива
- Единствено одобрение за поедноставена постапка (SASP)
- Овластен економски оператор (AEO)
- Земјоделски субвенции за извоз (AGREX)
- Преглед на контејнери

There are not as many opportunities for e-learning within the private sector. IT Academy Alexandria<sup>51</sup> and Semos education<sup>52</sup> offer standard courses for qualification and additional qualification in the area of informatics, and have begun to develop contents intended for e-learning courses, but these contents still haven't been posted online. If this idea is realized, the contents will be available for a certain fee.

The Algorithm Centre (Private high school)<sup>53</sup> has implemented a project for electronic grading and testing. The goal of this project is to enable the teachers in primary and secondary schools to use information technology as support for their work in the schools, thus contributing for the advancement of the tuition process as a whole, enable electronic grades and tests, online learning via the internet network, etc. Students from primary and secondary education can log into this system, teachers, who receive a username and password, as well as guests who can take tests. After the provided answers, the system indicates answers are wrong or right, so it is also a learning system, but the educational materials are only available offline.

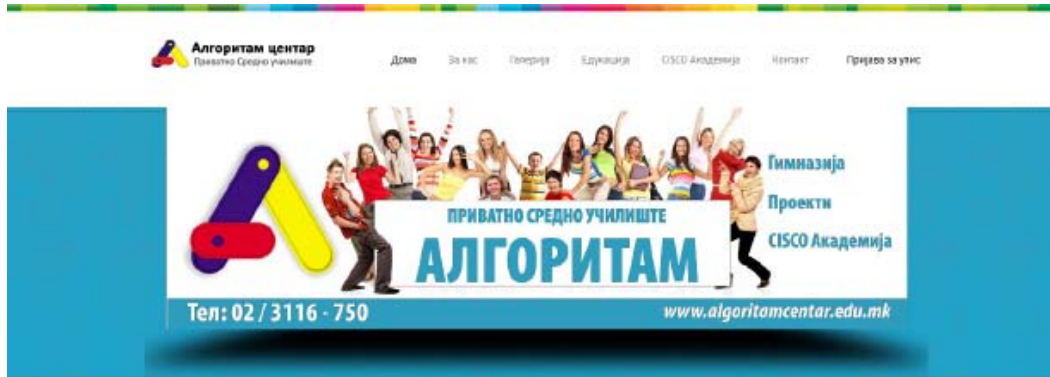
<sup>51</sup> <http://www.alexandria.com.mk>

<sup>52</sup> <http://www.semoskoc.com.mk>

<sup>53</sup> <http://www.algoritamcentar.edu.mk/index.html>

# METAMORPHOSIS

Foundation for sustainable ICT solutions



e - Тест  
Тестирај се тука >  
Пави на проектот



ЕЛЕКТРОНСКО ОЦЕНУВАЊЕ & ТЕСТИРАЊЕ

Активности за реализирање на проектот "ЕЛЕКТРОНСКО ОЦЕНУВАЊЕ & ТЕСТИРАЊЕ"

1 чекор

Во рамките на Проектот за модернизација на образованието при Министерството за образование и наука Алгоритам Центар овозможува активно учество во обука на наставници во областа на информатика и технологија во текот на фазата и во моментна работна обука на наставниците во

The Fifth Private Gymnasium<sup>54</sup> is also offering an e-learning system intended for students and teachers, functional since 2009. The system, among other things, is also used by the teachers for posting materials and schedules for their students. This system is closed for the public.

<sup>54</sup> <http://fifthprivatecollege.edu.mk/index.php>

# METAMORPHOSIS

Foundation for sustainable ICT solutions

The screenshot shows the website for Petta Private Gymnasium. At the top, there is a navigation menu with links for 'Дома', 'За нас', 'Настава', 'Уписи', 'Е-учење', 'Галерија', and 'Контакт'. A search bar is located on the right. Below the navigation is a large banner with the text 'УПИСИТЕ СЕ ВО ТЕК!' and 'Запиши се до 10 јуни и добиј 10% намалување на школарина!'. The main content area is divided into two columns. The left column has a section titled 'Петта приватна гимназија' and 'Резултати од квалификациски испит', followed by a news item about a qualification exam on May 14th. The right column features a video player with the title 'Учи за Бка! .avi' and a 'Добредојдовте' message. The video player shows a scene with students and text: 'ГИМНАЗИЈА ЗА ОБРАЗОВАНИЕ ПРАВНО-ИНЖЕНЕРСКА СТРУКА ЗДРАВСТВЕНА СТРУКА'. At the bottom right, there are links for 'Главно мени' and 'Систем за е-учење'.

Furthermore, Go!EnglishMak<sup>55</sup> is an online English language learning centre offering e-courses for this purpose. This center has been working since January, 2009. The e-courses vary from general English for primary and secondary school students and adults, to business English and other specialized courses, completely available online 24/7. The prices of the courses vary depending on the selected module. These courses are intended only for Macedonians who want to learn English as a foreign language.

<sup>55</sup> <http://englishmak.com/index.php>

**Go! EnglishMak**

ИНТЕРАКТИВНА ОБУКА ПО АНГЛИСКИ ЈАЗИК

ПОЧЕТНА | КУРСЕВИ | ЧАСОВИ | ЦЕНИ | ПАКЕТИ | ЗАПИШИ СЕ | КОРИСНО | ПРЕВОД | ЗА НАС | КОНТАКТ

ЧМН | ПАКЕТИ | СПЕЦИЈАЛНИ ПОПУСТИ | ПЛАЌАЊЕ НА РАТИ | ИНДИВИДУАЛНИ ЧАСОВИ | НАЈСОВРЕМЕНА ONLINE УЧИЛНИЦА

**НАЈАВИ СЕ**

Корисничко име:  
Лозинка:  
Влез

Доколку сте нов корисник кликнете на линкот [registaraj.se](#).

**EnglishMak**  
**ИМАШ ВАУЧЕР?**

Не сте сигурни во својот ниво?  
**БЕСПЛАТНИ** влезни тестови за определување на степен

**ОСНОВЦИ**

**Promo**  
Пробајте ги нашите курсеви пред да ги платите и уверете се дека учењето никогаш не било поинтересно.  
**Запишете се сега, платете подоцна!**  
[Запиши се](#)

**Важно за курсевите**

- Ви нудиме три курса за изучување на англискиот јазик (за основци, средношколци/возрасни и деловен) и секој од нив се состои од три степени: почетен, среден и напреден.
- За определување на Вашиот степен решете ги влезните тестови.
- Курсевите се креирани според британски стандардни програми за изучување на англискиот јазик како странски јазик.
- Секој степен ви е достапен 24/7 во рок од 6 (шест) месеци од неговата активација.
- По завршување на секој степен добивате сертификат.
- Наведените цени се за еден степен од секој курс. Доколку степенот што го посетувате го завршите порано од предвидениот рок (6 месеци), можете веднаш да продолжите со упис на повисок степен.

**Да зборуваш англиски е ПРЕДНОСТ!**  
[www.englishmak.com](http://www.englishmak.com)  
Да учиш од дома е ПРИВИЛЕГИЈА!

**АНКЕТА**

Дали би присуствувал/а на онлајн час еднаш неделно да да го подобриш твојот англиски преку конверзација?

Супер, токму тоа ми треба

Можеби, но не знам како ќе се снајдам онлајн

Не, подобро да си одам на курс во некое приватно училиште

**Гласај**

**Резултати**

Консултатива за корисниците на GO! ENGLISHMAK курсевите на Skype: [englishmak](#)  
[Go offline](#)

**facebook**  
СТРАНИЦА ЗА НАС

**ПРЕБАРАЈ**

In conclusion for this overview on institutional activities in the field of OER, I would like to indicate the framework established for future processes and projects. The framework was anticipated under the *National Strategy on Development of e-Contents (NSDeC)* and the *Action Plan on Development of e-Contents for the period 2010-2015 (APDeC)*. According to these documents, the competent institutions should organize annual open calls on designing e-learning materials, for the purpose of supporting continuous development. Moreover, these strategies anticipate that “all materials developed should be made available and free for all users”, including those outside the school system, given the fact that they are “developed by the public sector”. In the first two years of projects’ implementation “e-contents use should be monitored by means of annual analyses”, and should include identification of tools needed to support developmental processes and enriching e-contents in education. Activities on developing tools and aids intended for individual content creation are planned to start in 2012<sup>56</sup>. Future activities mainly concern the establishment of expert groups tasked to develop plans, select subjects and contents, specify them, determine and verify them against the quality standards, develop the selection methodology for subjects and contents, evaluate activities and contents, etc. It has been anticipated that e-contents evaluation will be based on the following criteria: usability<sup>57</sup>, accessibility,

<sup>56</sup> МИО, National e-content strategy, pg. 5.

<sup>57</sup> Usability, Eng.



and scalability, possibilities for reuse, transferability, quality, reliability and performance. Training on e-contents use has also been anticipated for the teaching staff. As part of NSDeC, the MIS defines the concept of “digital citizenship” as the pillar for the development of following activities and goals: “students understand human, cultural and societal issues related to technology and abide the principles on legal and ethical behaviour. Students: (a) advocate for and practice safe, legal and responsible use of information and technology; (b) are positive as regards the use technology that stimulates cooperation, learning and productivity; (c) demonstrate personal responsibility for life-long learning; (d) are leaders in digital citizenship.

As regards *digital educational repositories*<sup>58</sup>, the state of affairs in this field is in early development and activities in this field for the time being include digital catalogization and database, networking, but do not address access to contents. The project titled “Macedonian e-Libraries” (MeL)<sup>59</sup> was initiated on FOSIM’s initiative from 1999<sup>60</sup> and is part of the activities taken by the National and University Library (hereinafter: NUL) “St. Clement of Ohrid” in Skopje.

NUL’s activities also include a “virtual library” implemented as part of the COBISS<sup>61</sup> Program, representing a project for online catalogization of library units. Information contained therein is of reference nature (author’s name, work’s title, publishing house, year of publication, abstracts, for a number of library units, as well as data on where those materials can be found in hard copy).

The list of members registered includes 44 libraries from Macedonia<sup>62</sup>. COBISS’s local network is connected to the networks in Slovenia, Bulgaria, Serbia, Montenegro and Bosnia and Herzegovina, while

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<sup>58</sup> Digital Educational Repositories, Eng.

<sup>59</sup> Available at <http://w3.nubsk.edu.mk>

<sup>60</sup> „In 1999 , together with other countries, Macedonia was targeted by the initiative of the Open Society Institute to improve the situation with the libraries by purchasing computers and providing internet connectivity. Through an external grant from the Foundation Open Society Institute - Macedonia and the South-East European University from Tetovo, access to EBSCO was subscribed and only a few institutions were using this extraordinary convenient opportunity to use free electronic information.

Two years have passed and the statistics about the use of EBSCO indicated that Macedonia practically has a low interest in using databases. In March 2003, the Foundation Open Society Institute - Macedonia attempted to present the eIFL project to the public, to present the use of the databases of EBSCO and the eIFL consortium, and the Ministry of Culture took the initiative to establish a national consortium of e-libraries and projected stronger financial support for projects in the area of e-publishing and digital libraries. On April 17, 2003, a general assembly of the directors of public libraries and related institutions was held in the National and University Library "St. Kliment Ohridski", and the first consortium of e-libraries in Macedonia was formed.

The response was excellent: 28 out of 33 libraries signed the Letter for authorization of the council of MeL“, source: [http://194.149.132.36/Index.php?drop\\_menu=5](http://194.149.132.36/Index.php?drop_menu=5) .

<sup>61</sup> [http://www.vbm.mk/cobiss/cobiss\\_mk-en.htm](http://www.vbm.mk/cobiss/cobiss_mk-en.htm)

<sup>62</sup> [http://vbmhome.vbm.mk/mk/o\\_cobissu/libraries.asp](http://vbmhome.vbm.mk/mk/o_cobissu/libraries.asp)

the connection to Albanian networks is in its initial stage. NUL also implements the project “Digital Library”, which at the time being is comprised of around 40 content units mainly from the field of Macedonia’s cultural and historic heritage.

Wiki contents<sup>63</sup>, i.e., the open Internet encyclopedia in Macedonian language<sup>64</sup> were marked by a modest increase in scope and variety<sup>65</sup>. At the moment, Wikipedia has 42563 articles and 23768 registered users.

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<sup>63</sup> <http://mk.wikipedia.org>

<sup>64</sup> Wikipedia contents are being viewed in Macedonian language as the official language on the whole territory of the Republic of Macedonia.

<sup>65</sup> <http://stats.wikimedia.org/EN/TablesWikipediaMK.htm>

## Conclusions

This text addressed the current state of affairs and the status of OER and e-learning in the Republic of Macedonia. Different levels of development were noted as regards particular concepts and principles. The general assessment indicates the existence of initial activities, as well as more developed phases of concepts on open education and e-learning available for all. The infrastructural component which has been gradually developed and promoted is a prerequisite for OER application and e-learning. Technological components are also necessary in the development process, but in order to provide their contribution as needed, they should be coordinated with the remaining components.

Despite the several serious and ambitious projects and activities aimed to include the Republic of Macedonia among the countries where OER play a significant role in education, the general assessment indicates shortfalls as regards the coherent and coordinated activities and projects. Project activities are being initiated without completing previous development phases in terms of technology, tools and contents.

Public institutions, except for their projects, fail to focus their resources on stimulating private initiatives and collaboration, although they are considered of crucial importance in the light of increased activities that complement public projects. A coherent system needs to be developed and implemented in all spheres: technology, software, program policies, contents, etc.

The key problem, which is a major obstacle are copyrights and related rights. It is of utmost importance that they are redefined, notably those that govern the education and scientific-research process. Redefining them in the parts related to the educational and scientific-research process is extremely necessary.

Trends on users' preferences and habits indicate the need for the so-called "OER on-line nodes", or web-services/websites that would provide users easier access to open contents and tools. Under the current system in place, they are mainly scattered and disbursed and without a regulated search engine optimization, both on foreign and in-country browsers. In Macedonia, such "nodes" should enable easy review of the contents, connection between the contents and easy access to them.

Status quo was noted as regards the availability of public scientific works. Again, copyrights-related problems are the reasons for this. The strategy on enabling access to e-contents is yet to be determined, and for that purpose the models applied by other countries should be given due consideration. For the time being, mainstreaming and active support of contents publication under Creative Commons licenses is underutilized.



As regards ICT literacy, it can be concluded that further development and training delivered to all stakeholders is needed. Training and exchange of experiences on this particular matter among users need to be intensified. Training should address all OER-related activities (from technical to research) and should be adjusted to different groups of participants.

New media open many possibilities for creative use of digital tools and free services and resources. Their use is marked by a continuous increase, but unfortunately activities in this field are utterly fragmented in order to have any major effects on the education process as a whole. Teachers with certain computer literacy more frequently utilize the possibilities offered by these services in their instruction delivery, but also in their communication with students, their parents, and for other purposes. This process can be supported and intensified with additional trainings on various levels and with an exchange of experiences by means of different forms of associations or networking. Standardization of software tools is certainly needed for the purpose of generating contents, courses, programmes and like. Failure to address this issue would result in a model of scattered activities, where energy and resources would be wasted on processes that are uncoordinated.

## Recommendations

The general assessment is that in the Republic of Macedonia there are activities, projects and developmental efforts that address and partially generate the concepts of e-learning and “Open Educational Resources” (OER). Nevertheless, these activities are sporadic, non-coordinated, non-compliant and non-systematized to be able to achieve serious break-through in the implementation of the major project titled “open education”.

Activities are conducted on a state-institutional level, on a level of foreign and international support and activities, through non-governmental organizations, and even include in-country private initiatives implemented by groups and individuals. There are no pillars that would provide functional integration of such scattered activities. The integrator thereof should be an inclusive model regarding the key actors and should encourage their cooperation and coordination. A coherent system on technology, software, policies, projects and content generation should be developed and implemented.

Models of activities coordination and integration should target individual users or groups, and not only the entities working on production of resources. This would imply existence of an on-line service or websites that would facilitate use of available resources.

This research is made as part of the  
'Project for decentralized cooperation  
between Lower Normandy and Macedonia'.



## About the edition

The results obtained from the previous two researches conducted by the Metamorphosis Foundation served as a basis for this report:

- Sead Dzigal, 2010, *Open educational resources in Macedonia*, Metamorphosis Foundation, Skopje
- Radmila Zhivanovikj and IPSOS Strategic Puls, 2010, *The use of computers in the educational system of RM*, Metamorphosis Foundation, Skopje

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