ENHANCING KNOWLEDGE SOCIETY CONCEPT VIA EDUCATIONAL PROJECTS

OKSANA ZAMORA

Economics and Management Faculty,
Sumy State University, Ukraine

TETIANA KHVOROST,
Engineering Technologies Faculty,
Sumy National Agrarian University, Ukraine

NATALIIA KLIETSOVA
Law Faculty,
Sumy National Agrarian University, Ukraine

e-mail of corresponding author: pantomima@ukr.net

Key words: Knowledge society, prosumer, open education, MOODLE, e-learning.

Abstract:

The research goal was to understand the importance of a coordinated response to the challenges aroused from offering educational services to foreign citizens and adults by Ukrainian universities. The paper presents the experiences on how the information and communication technologies may be used in addressing challenges of modern society while changing the teaching approaches.

Given Internet and informational-communication technologies role in effective building of the inclusive knowledge society the paper presents the overview of three case studies observed during a 4-7 years period at the basis of Sumy National Agrarian University: peer-design of the education courses and MOODLE use for distance learning of foreign students (15 courses, 80 students), and rural citizens (386 farmers) education via Internet. The conclusions were delivered under the context of explored issues, challenges and opportunities of the knowledge society, open education and lifelong learning concepts. The paper highlights the importance of identifying good practices in specific areas of youth and adult education within the educational projects under the increasing foreign students flow into the country and rapidly rising number of rural unemployed.

The researches outline the pressing need for collaboration in educational content development via engagement of not only peers but also learners in order to avoid a widening gap between educational institutions/scientists and individual learners. The need for development of adults' digital skills is increasingly becoming a key for implementation of the lifelong learning concept in Ukraine, and was also addressed in the paper. The validated framework, tools and methodology of the informational-communication technologies use should provide a structured approach to the educational content development within the current Ukrainian educational system. The results of the paper try to generalize the best approaches to reach the aforementioned goals which may be further used by universities working in the same field.

Introduction

The teachers team consisting of the authors of the paper was among the first teaching staff of the Sumy National Agrarian University (Ukraine) who started working with foreign students in English and who was also involved in the MOODLE on-line courses development. The number of foreign students (mostly coming from African and Asian countries) has been constantly increasing since 2010, while due to the visa issues they couldn't start to participate in the educational process in time: some of them arrived 2 months later the academic year beginning. The university educational project aimed at engagement of the MOODLE platform into on-line courses design set the problem of development the content which would have been easily grasped by the foreign learners. This brought out the need to investigate the comprehensiveness of the open education and digital tools use within the educational process at the university.

A number of empirical observations made us to consider the effectiveness of an educational course design done by a single teacher, because, as the experience showed, the courses content delivered to a Ukrainian group of students and to a mixed one (or up to 100% consisting of foreign students) is expected to be up to 50% different. This refers to several defining and significant factors: educational and cultural background, cognitive skills, teaching approaches used by previous teachers, places of future knowledge application (both in geographical and management-practice sense), personal motivation, teacher's and students' ability/experience of teamwork under the intercultural context, etc.

The need to teach foreign citizens in English and absolute lack of English-language literature available in Ukraine also pushed us to use as many Internet open access resources as possible. This brought up to the surface a number of issues to be learnt and solved: starting from intellectual property rights and finishing with technical implementation of the ICT tools into the educational process considering the lack of PC equipped classes, speed of the Internet, teachers' and students skills in ICT use, their motivation to do so, etc.

Additionally, during the FAO/EBRD educational project[*] implementation during 2014-2016 the researches team had to deal with the representatives of the farming sector of seven regions of Ukraine teaching them directly or on-line. This allowed to observe the empirical data of the MOODLE/Internet use by the farmers, representing both the adult education and the rural citizens segment. The summarized and generalized conclusions of the 5 years' experience in the topic are presented in the paper along with the processed theoretical implications which are currently discussed within the scientific community.

The research paper goal is to understand the importance of a coordinated response to the challenges resulted from offering educational services to foreign citizens and adults by Ukrainian universities. The paper presents the experiences on how the information and communication technologies may be used in addressing challenges of modern society while changing the teaching approaches. The research results may be used by the relevant universities which undergo the same transformation process on their way to the full knowledge society members.

In regards to the computer mediated information delivery, it is important to consider the cognitive load theory which was used by R. Mayer for his further developments of an e-learning concept. This theory (authors: Alan Baddeley and Graham Hitch 1974) discloses that "working memory has two largely independent, limited capacity sub-components that tend to work in parallel – one visual and one verbal/acoustic". This principle is laid in basics of the further text-based digitalization of the educational process.

[*] The two stages project "Successful Grain Agribusiness in a Small Area", which had been implemented in 2014-2016 with the support of "Central European Initiative" in partnership with Sumy National Agrarian University.

It is well-known that traditionally this process was built upon oral communications between teachers and learners which didn't provide time to reflect on the material delivered. The speech of the instructor may be also badly structured and specifically sounding, not all the students are capable to fix the necessary key points, etc. D. Garrison and colleagues (2000, 90) considered computer conferencing as one of very promising teaching tools and even offered the Community of Inquiry theoretical framework to describe advantages of the collaborative-constructivist learning activities during online discussion forums. This framework leads the process of learning experience through the development of three elements – social, cognitive and teaching presence. Lipman (1991) enlists the following characteristics of the Community of Inquiry: "questioning, reasoning, connecting, deliberating, challenging, and developing problem-solving techniques".

Nowadays the use of digitalized communication is becoming increasingly adopted by the higher education institutions all over the world. Many leading universities are looking at a computer-mediated communication with their learners as at something that is worth to invest in because it is a "versatile medium for the delivery of educational programs "anytime, anywhere" (D. Garrison and colleagues 2000, 87). This lays in line with the global trends of countries integration, migration for work and studies and, what is more important, with a philosophy introduced by the EU experiences and fixed in the Sustainable Development Goals of the UN 2030 Agenda for Sustainable Development (the UNO 2015).

This philosophy was expressed also by Wim Van Petegem (2009), the associate professor of the Katholieke Universiteit Leuven. He sees lifelong learning as an attitude which requires training of relevant skills. This statement is very important for us while considering the attitudes to studies of the rural citizens in Ukraine and the skills they possess. Of course, both are mostly limited by the initial poor educational background and available scarce resources forming decadent mind-set, namely that's why the vision of W. Petegem that "lifelong learning is a personal combination of formal, non-formal and informal learning, with individual and collaborative activities" adds significant value to our recommendation to change the governmental approaches in the educational system of Ukraine.

Still, with this paper we will outline the pressing need for collaboration in educational content development via engagement of not only peers but also learners in order to avoid a widening gap between educational institutions/scientists and individual learners. The modern knowledge shouldn't belong to the closed circle of "magicians" as it was in ancient times. Information and knowledge is power but not for the world to be ruled by a limited number of people. It is a power for enriching each individual, guaranteeing societal safety and prosperity. The input of a real sector of economics into educational programs development means a lot for their learning outcomes future applicability and efficiency of their graduates at work.

We also need to study the necessity for development of adults' digital skills which nowadays increasingly become a key for implementation of the lifelong learning concept in Ukraine. The validated framework, tools and methodology of the informational-communication technologies use should be outlined and will provide a structured approach to the educational content development within the current Ukrainian educational system.

Why the IT Skills for All Is Still a Subject of Discussion in Ukraine?

Apart from Ukraine, which follows the current world trends with a 10-20 years gap, the European Commission issued a new Skills Agenda for Europe in 2016. This document promotes all kinds of actions "to ensure that the right training, the right skills and the right support is available to people in the EU so that they are equipped with skills that are needed in a modern working environment, including the promotion of digital skills" (EUROSTAT 2017). In fact, European Commission has recognised and has been supporting these developments for decades already. Strategic Framework for education and Training ("ET 2020") stresses on innovation enhancement through the use of ICT tools and along with the Digital Single Market Strategy contributes to the strengthening of the digital economy and society. Access to the Internet and open education development are seen to be essential for the development of e-government, e-business and e-learning. Ukraine, as any other post-USSR country, strongly lacks similar comprehensive approaches. Open educational resources are still considered to be of low trust and are rarely used in the educational process, while collaborative approach to knowledge creation is an absolutely new tool, still to be commonly accepted.

The difference in e-learning perception by the EU and post-USSR countries is vividly seen by the following example: Merriam-Webster's Dictionary, America's leading and one of the most-trusted providers of language information for English learners in post-USSR countries, doesn't offer the definition for the e-learning term at all. This is a traditional approach to the language data base formation which lacks flexibility and necessary timely resources of a whole volunteers community. While a free online encyclopaedia "Wikipedia" gives it with references to Richard E. Mayer, the founder of the e-learning theory, as a "cognitive science principles of effective multimedia learning using electronic educational technology". Wikipedia is an Open Educational Resource that can be modified and enhanced by the volunteers from around the world. This unique feature of the OERs allows free access for everyone to the information which once required special conditions of access and more complicated rules of reuse, translation and modification. Still, even though post-USSR countries enjoy the benefits of such resources they are not considered to be of scientific or teaching value for the schools and universities. D. Amemado notes this tendency even for the European universities which "do not adopt technologies primarily for pedagogical or teaching and learning task-related reasons" (Amemado 2014, 28). ICTs are rather used as an additional enriching tool which may be used by a learner's choice and will.

Modern Computer-based Educational Philosophy of Prosumers and Ukrainian Realities

Modern world educational philosophy, proved by practices, states that in the country that tends to be successfully developing, everyone should have access to high-quality education (free of charge, at low or high prices – depends on a state policy choice), its resources (including infrastructure) and the related opportunities (to apply the knowledge and competences in exchange to decent rewarding). Of course, there may be such barriers as learner's lack of finance, physical distance, difficulties in understanding, out-dated materials, etc. But namely these issues are offered to be solved by the use of OERs which allows the learner to enhance his/her knowledge and skills despite the barriers.

For example, Open Education Europa's Resources page counts a large collection of resources in the 24 European languages and at all educational levels, and there are lots of such data bases more. Massive open online courses (MOOCs), accessible to anyone with a computer and access to the Internet, allow enrolment of a significantly bigger number of students than it is possible for the traditional educational institutions. There are researches that call the MOOCs "to be an online crossroad where to learn from other areas of studies and from professionals and scholars of different backgrounds" (Amemado and Manca 2017, 22). They also stress that learning activity is currently "distributed across people, environments and situations" (Amemado and Manca, 2017, 25). It means that roles of the learners' or instructors' are exchanged sometimes and subjective human knowledge assessment is eliminated by automatic grading.

It is interesting to note that we are describing the trends that exist now, but were caused by the development of digital technologies and information society transformation, while in 1980 an American futurologist Alvin Toffler had already offered a term "prosumer" in his "The Third Wave" book. He referred to a person who consumes and produces media at the same time. Nowadays this term describes either online buyers or, in line with a new educational philosophy, learners who are involved in the development process of educational resources. The university students, graduates, adult learners received an opportunity to use more personalized teaching materials adjusted to their needs – either cognitive or professional, cultural or financial. And thus, involvement of the learners raises the material value, while educators may further use, share, and modify those materials, significantly multiplying the learning effect.

According to A. Peters and G. Britez "Openness is a concept that has come to characterize knowledge and communication systems, epistemologies, society and politics, institutions or organizations, and individual personalities" (Peters and Britez 2008, 3). It means that downloading someone's case study, adapting it to your students' needs and re-uploading a new version back on-line is not a crime but an act of creation the added value for the educators community. Commenting on possible adjustments and asking for more diversified/applicable examples or tasks is not a preference of a good student-teacher relationship any more, but rather an interesting challenge affordable by any stakeholder. Still, even though there are no

borders in the Internet or, sometimes, watermarks on the documents or pictures, the original content is a subject to national copyright laws. As it is open for use, it may be remixed or repurposed, but even then it is under the ethics and integrity rules of the society. Facing these challenges is a difficulty for the Ukrainian society as well, as for any other post-USSR country too. Legislation bottlenecks are accompanied by the low awareness on the issue or simply lack of mental readiness for the IPR responsibility.

All in all, the effects of the OERs and ICT tools on the quality of the learning process, its final outcomes, future learners' perception of the studies and, what is more interesting, of the author-produced knowledge have not been well studied yet because, as for any social and cultural process, it may take decades to see the results.

As for the "knowledge society" term, it was introduced by Peter Drucker in the late 1960s and developed by Robin Mansell and Nico Stehr 30 years later, being recognised by all the OECD members, emerging economies and even developing countries nowadays. The UNESCO world report 2005 "Towards Knowledge Societies" outlined the need of further transformation of the knowledge society onto a knowledge-sharing base, stating: "… for access to useful, relevant knowledge is more than simply a matter of infrastructure – it depends on training, cognitive skills and regulatory frameworks geared towards access to contents" (UNESCO 2005, 21). The issue of the content quality and accessibility motivated this research paper creation.

Research Methods and Background

The research question was inspired by the experience of the researchers team in dealing with the creation of the university curriculum for foreign students and adults, as well as with participating in the professional and career development competences of a university teacher. Being an executive of the educational projects with the use of on-line resource enriched the researches team experience and observations data. The research question was to understand the importance of a coordinated response to the challenges resulted from offering educational services to foreign citizens and adults by Ukrainian universities.

By using MOODLE feedback analysis we obtained the results of on-line education potential for foreign students and for adults coming from the narrow professional field and being the rural residents (farmers). By means of the questionnaires and face-to-face communication we asked the users of our educational programmes about the challenges they faced during accessing the on-line learning and during the studying process itself. Our personal observations during 7 years of teaching foreign citizens (up to 15 students each year per each member of the research team, 80 students in whole both in bachelor and master studies) and 5 years of the educational projects implementation (15 on-line courses in English and 2 on-line courses for farmers) gave us the opportunity to present the experiences on how the information and communication

technologies may be used in addressing challenges of modern society while changing the teaching approaches. The number of farmers who were involved in the FAO/EBRD specialized training program "Successful Agribusiness Grain in a Small Area" was 220 (6 modules) in 2014-2015 and 166 (4 modules) in 2015-2016.

The conclusions were delivered under the context of explored theoretical issues, challenges and opportunities of the knowledge society, open education and lifelong learning concepts.

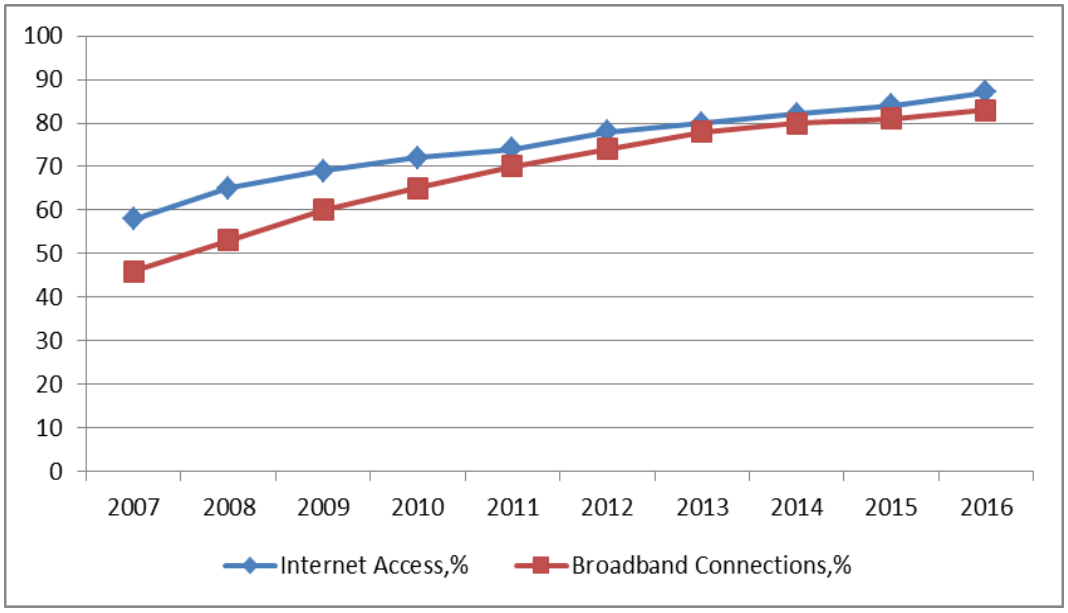
Observation and Analysis of Results: Ukraine Comparing to the EU

The major findings of the study are based on the analysis of the European and Ukrainian experiences in enhancing the knowledge society via open education and ICT tools development. Thus, according to the Deloitte Limited EU Funding guide (2014, 5-7) the main EU funding programmes of the 2014-2020 period are: “Horizon 2020” with a total budget of €77,03 billion, “Connecting Europe Facility” with €21,94 billion and “Erasmus+” with €14,8 billion. Apart from those there are also other funding programmes for education in particular (Consumer Programme 2014-2020, Customs 2020, Fiscalis 2020, Hercule III, Internal Security Fund Component for Police Cooperation, Pericles 2020) and separately there are those aimed at the ICT development (Ambient Assisted Living Joint Technologies Programme (AAL JP), Competitiveness of Enterprises and SMEs (COSME), Fiscalis 2020, Galileo, Egnos, Horizon 2020). These statistical data show the level of financial support provided for the innovations and ICT development, as well as for education in Europe. While, according to the official Ministry of Education and Science report, there is one computer per 27 students in state schools in Ukraine. 87% of schools have the Internet access, 96% of schools are equipped with some amount of the hardware (40% of it is old-fashioned) and software (13% of it are used without an official license). And the last emotional piece: 360 thousand teachers have been trained in the last 15 years. The Ministry of Education has just proposed to amend the Resolution of the Government (No. 65 dated 01.03.2014), which will allow to edit the state targeted programs in the field of ICT in education and procurement of modern computer equipment, equipment and software by educational institutions (Derevianenko 2016).

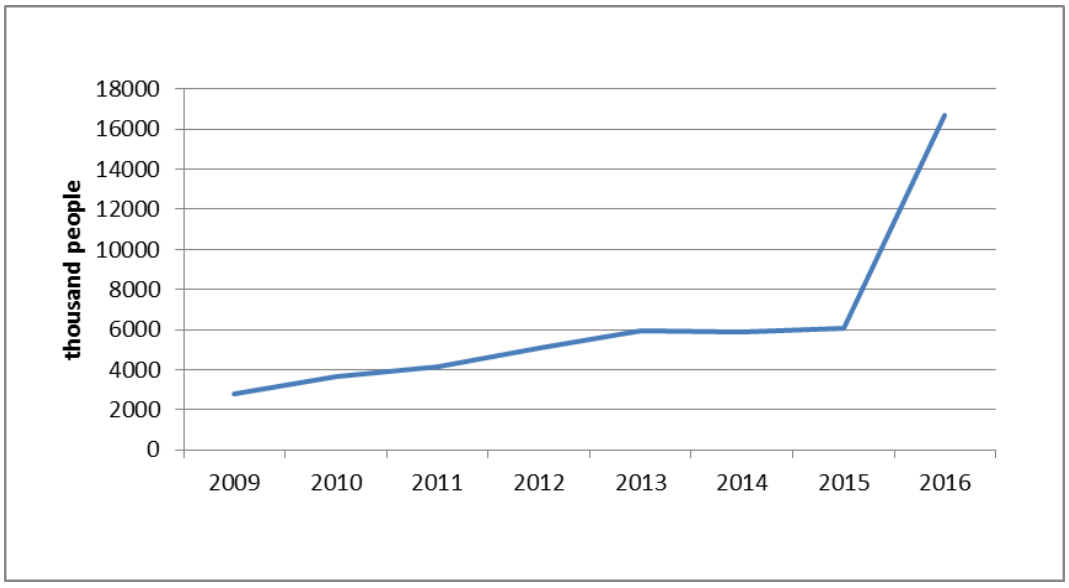
The insufficient infrastructure (number of computers, low Internet speed, relatively high costs for ICT skills training, mobile Internet traffic, Internet accessibility in rural and remote districts), low awareness in ICT potential for daily life and in applicable opportunities for advanced computer skills, weak state policy for digital society development and innovations support – all these and much more results in low computer skills and low efficiency of use of digital resources in Ukraine. Affordable and widespread broadband Internet access is very important for a knowledge-based society enhancement.

According to EUROSTAT (2017), 83 % of the households in the EU-28 had broadband access to the Internet in 2016 (see Graph 1), apart from the Ukrainian state-of-the-art (see Graph 2), which is 62% of citizens older than 15 (Factum Group Ukraine report 2016). 97 % of such EU users were recorded in

Luxembourg and in the Netherlands, while the lowest rate of 64 % households with internet access was observed in Bulgaria. More than 82 % of all EU citizens starting from the age of 16 used the Internet at least once in three months, 71% of whom accessed it on a daily basis.



GRAPH 1. INTERNET ACCESS AND BROADBAND INTERNET CONNECTIONS OF HOUSEHOLDS, EU-28, 2007–2016



GRAPH 2. NUMBER OF INTERNET USERS IN UKRAINE, 2009-2016, THOUSAND PEOPLE (% OF ALL HOUSEHOLDS)

Source: EUROSTAT, 2017. Source: State service of statistics of Ukraine, 2016.

It should be noted that similar to Ukraine, there is an urban-rural division within the EU-28 in terms of internet access. 86-88 % households in cities/towns have comparatively high access rates, while in rural areas their share is 80 %. The improving situation in Ukraine with those numbers doesn't mean the improvement in computer skills for the rural population though. Almost 47% of rural households and 69% of urban ones have the Internet access (Factum Group Ukraine 2016).

It is important to note that in the EU-27 women and men shares in the number of those who participated in education and training in the 12 months before the interview were equal. According to the official statistics, men were sensibly more likely to get new knowledge in the Netherlands and Germany, while the reverse was observed in Finland, Lithuania and Latvia. It's a common sense that in 2011 the data showed, that younger persons (aged 25–34) would be twice more active than older workers (aged 55–64). The most interest for further training were shown by the persons with a tertiary level education (61,3 % for the EU-27 in 2011), while only 21,8% of those with the lower secondary education were the likely to have participated in it.

Except the background education, statistical observations in the EU-27showed the trend of three most commonly named obstacles for education and training (EUROSTAT 2011): 50% considered the training unnecessary; 21% claimed lack of time due to family responsibilities; 18 % complained for the conflict with work schedules (see Table 1).

TABLE 1. OBSTACLES TO PARTICIPATION IN EDUCATION AND TRAINING, 2011 (%)

Countries	Health or age	None within reachable distance ([1])	No time due to family	Did not have the prerequisites ([3])	Too expensive, could not afford	Lack of employer/ public service support	Conflict with work schedule	No need for (further) education and training	Other personal reasons	Could not find what was wanted([4])	No access to a computer or internet (for distance learning) ([5])
EU-28	8.5	6.1	20.9	4.2	13.2	8.0	18.0	50.0	14.6	8.6	1.6
Belgium	6.4	3.6	10.3	2.6	4.7	4.0	13.0	43.7	3.9	2.9	0.5
Bulgaria	3.1	3.8	6.2	2.4	8.9	1.9	7.2	88.8	2.8	2.2	1.4
Czech Republic	7.1	3.7	22.1	2.1	7.6	4.9	11.1	41.6	16.3	7.9	1.2
Demnark	7.0	2.2	12.0	2.0	14.4	10.7	16.8	:	5.5	13.0	:
Germany	12.1	5.6	23.0	7.0	13.3	10.6	21.2	76.4	19.0	10.0	1.8
Estonia	16.3	14.0	14.6	1.4	22.0	4.8	24.0	:	15.9	15.4	2.8
Ireland	3.1	2.4	28.4	3.1	8.8	2.0	6.7	6.0	4.8	2.7	0.8
Greece	18.3	10.4	39.3	10.4	28.4	5.7	23.2	42.2	21.7	21.3	2.5
Spain	5.6	2.3	30.7	3.2	6.6	7.5	20.5	11.5	21.6	4.7	0.6
France	5.1	6.3	6.5	4.5	11.6	14.1	15.7	78.6	5.8	9.8	1.9
Croatia	:	:	:	:	:	:	:	:	:	:	:
Italy	8.7	10.3	31.8	5.1	22.2	4.8	25.0	14.8	17.0	13.9	3.0
Cyprus	5.7	5.0	36.3	2.4	15.7	3.9	19.3	69.1	10.2	6.2	:
Latvia	3.8	6.8	9.9	4.9	19.3	7.3	15.3	87.7	4.6	9.4	2.3
Lithuania	14.3	3.9	9.4	4.3	19.0	2.0	20.0	68.4	16.4	2.8	1.3
Luxembourg	6.3	7.3	21.4	2.8	12.8	8.9	24.1	81.7	10.0	11.6	:
Hungary	4.6	5.1	6.7	2.3	11.4	4.1	8.2	87.3	1.6	2.0	1.3
Malta	4.4	1.4	17.7	1.6	6.9	2.3	19.1	:	7.9	1.9	:
Netherlands	16.2	11.7	37.3	4.3	19.5	12.0	28.4	51.9	19.9	15.7	2.6
Austria	5.2	8.0	13.2	3.0	7.4	5.1	12.2	:	4.9	5.3	1.6
Poland	11.6	2.9	21.6	1.8	15.5	5.2	11.8	60.1	13.6	5.7	0.6
Portugal	3.8	6.2	5.0	0.9	5.5	1.3	1.6	2.9	24.4	:	:
Romania	7.5	28.1	30.9	12.9	52.5	30.0	34.7	91.3	19.2	6.0	10.4

Slovenia	6.9	4.2	16.1	1.4	12.6	3.0	13.0	61.8	27.4	6.8	:
Slovakia	6.2	1.4	6.0	0.7	4.7	1.8	4.9	30.0	4.6	2.0	0.5
Finland	12.8	15.9	21.7	4.7	11.1	10.6	31.1	39.8	12.1	13.5	1.8
Sweden	8.1	7.9	18.4	4.2	10.2	8.6	16.6	63.3	26.0	9.2	:
United Kingdom	:	:	:	:	:	:	:	:	:	:	:
Norway	6.7	9.0	14.2	6.8	9.4	9.6	17.1	34.5	6.1	8.1	2.2
Switzer-land	18.5	15.8	34.6	8.0	31.8	19.3	39.2	70.4	71.5	22.5	4.8
Serbia	5.4	3.2	12.3	0.6	18.5	1.7	6.3	77.9	3.8	2.9	:
Turkey	3.5	3.0	14.0	4.6	4.3	0.9	3.5	82.8	3.9	2.0	0.2
Source: EUROSTAT, 2011.											

The abovementioned obstacles are also commonly cited in Ukraine by the rural citizens and citizens with medium or lower income. Still, there is a tendency for adults to start training for improving their professional qualifications, as well as for getting a higher degree for the job promotion. The input of a real sector of economics into educational programs development means a lot for their learning outcomes future applicability and efficiency of their graduates at work. Thus, the university graduates were involved in the curricula review providing their valuable and specific feedback.

Observation and Analysis Results: Teaching Foreigners and Adults in Ukraine

Another inflow of those who may study using the distance learning form of education are the foreign students, whose number has been constantly increasing since 2010. Mostly these are the citizens of African and Asian countries with either rather basic academic skills in the field of computer literacy and Internet navigation. The other difficulty is that in addition to their academic background that sometimes differs from Ukrainian significantly, due to the visa issues they are not able to start the educational process in time (1st of September). Some of them may be 2 months late for the academic year beginning, which means they should start learning something themselves. Sumy National Agrarian University has launched an educational project of the on-line courses at the MOODLE platform. The need to design the English language content and then upload it to the MOODLE set the problem of the teachers' e-learning basics literacy: we had to investigate the comprehensiveness of the open education and digital tools use within the educational process. Up to 80% of teachers cohort had their MOODLE training within next 3 years.

Students feedback and voluntary peer-review made us consider the effectiveness of an educational course design only by one teacher. A lot of factors that define the quality of the course and its future applicability by the students should be taken into account: educational and cultural background, cognitive skills, teaching approaches used by previous teachers, places of future knowledge application (both in geographical and management-practice sense). For example, the courses content delivered to a Ukrainian group of students and to a mixed one (or up to 100% consisting of foreign students) must be up to 50% different, and if it refers to such courses as "Commercial Law of Ukraine" or any other course focused on Ukrainian legislation or experiences, the "international" content must occupy a bigger share.

For this, English-language literature had to be used which was absolutely absent at the Ukrainian market. The import costs of these books is usually 2,5 times higher than their original price. All these pushed the teaching staff to use as many Internet open access resources as possible facing more challenges to be learnt and solved: from intellectual property rights to technical implementation of the ICT tools into the educational process. It was a difficult and time and efforts-consuming process considering the lack of PC equipped classes, speed of the Internet, teachers' and students skills in ICT use, their motivation to do so, etc.

EBRD/FAO Project Case Study. The observations results obtained during the implementation of two phases of a specialized modular training program "Successful Agribusiness Grain in a Small Area" (financed by EBRD and FAO under the support of the "Central European Initiative" Fund) represent a low potential for on-line education and OER use for rural citizens of Ukraine. They also demonstrated low motivation and very low ICT skills.

The training program was designed for representatives of farms with a land area up to 5 thousand ha and engaged 220 + 166 participants from 7 and 10 regions of Ukraine respectively to the project phase. The majority of the registered participants consist of the farms' heads, their deputies (both cover 57%), agronomists, economists and engineers. The average size of participants' farms area is 997 ha. During the project a tendency to attract more representatives of the households with a small land plot had been noted.

85% of the participants of the second phase were represented in the previous project stage. A deeper research on the topic showed that farmers if use the Internet for information search, use either news portals (as www.ukr.net or www.mail.ru) or specialised trading web-sites. More seldom advanced agriculture-targeted web-portals (as www.latifundist.com, www.fruit-inform.com or www.kurkul.com) are checked.

A specific training program was designed for each project phase containing face-to-face seminars, field trainings and an on-line course within the MOODLE platform (for example, at http://fao.sau.sumy.ua/login/index.php). The participants were informed about the on-line course opportunities and technicalities in live and also via direct e-mailing. The photo and video records of second phase project activities (trainings, press conferences at the regional and national levels) were placed at the project web-page (www.fao.sau.sumy.ua). On completion of each module the participants were tested on-line on mastering the theoretical and practical materials, the results of this formed each participant's score within the entire project training course. The best results of the second project phase were awarded with an educational tour to France. Because of the presence of an additional motivation factor this paper presents namely the analysis of the second project phase covering 166 farmers form 10 regions of Ukraine.

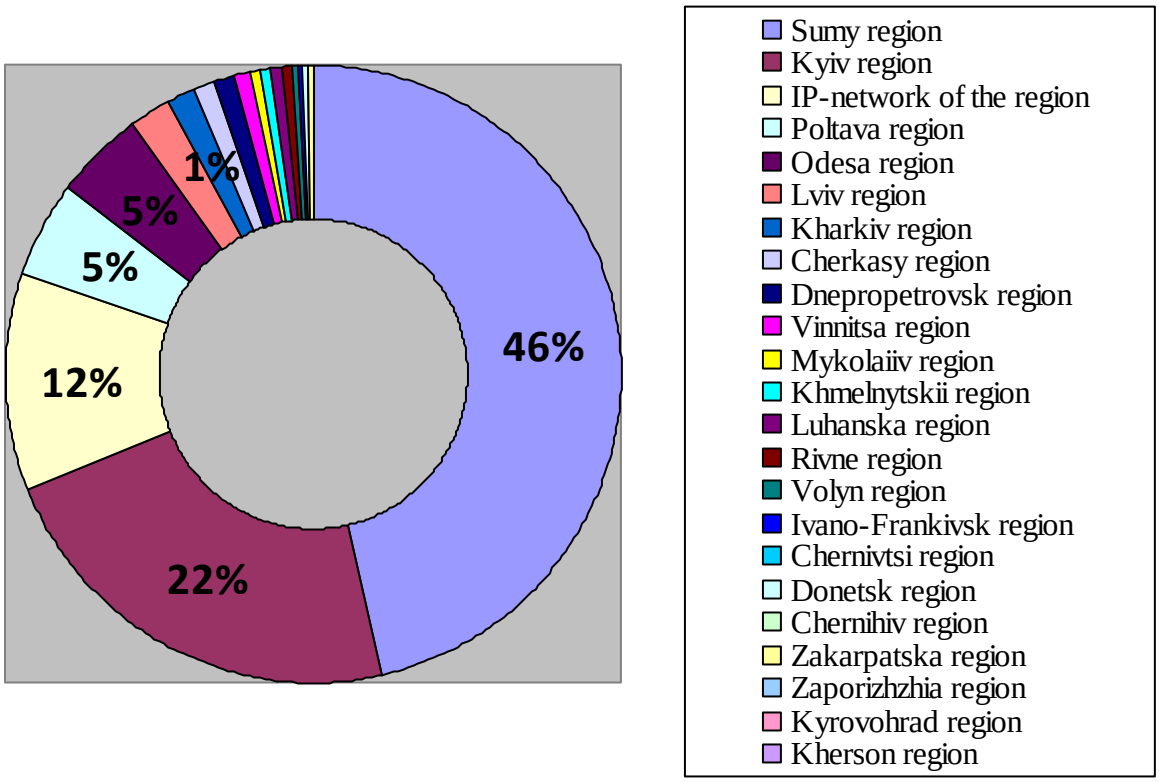
For the wide promotion of the project results and an on-line course public access, there were a project web-page and a Facebook group links, as well as an inviting banner to the on-line MOODLE course

created at the Sumy NAU official page (www.sau.sumy.ua). Promo videos and texts were constantly added to the project web-site telling about the launch\closure of the modules as well as about the invitation to the on-line course. The process of registration for participation in all the modules was carried out in several ways: online through the project website (2% of farmers used this tool), via email (only 10%) and, mostly, via direct personal phone calls. The results of the observations demonstrate that 100% of the farmers had the e-mail address, 70% used it personally and only up to 30% used it on a regular basis. Most of the project information requiring urgent farmers feedback had to be delivered via the phone.

As for the reporting date of 02.03.2016 there were only 46% participants registered in MOODLE, originally coming from Sumy, Kyiv, Poltava, Odessa, Zaporizhzhya, Zhytomir, Kharkiv, Chernihiv, Lviv, Cherkasy regions of Ukraine. This number represents both urban and rural populated regions. According to the statistics of the targeted visits (1.10.2015 - 01.03.2016) there were 1867 unique visitors at the project web-site (for your information: a business website of a US SEO solutions firm "Brick Marketing" may get 1200 a day, a very large US law firm "Deckert" gets 3000 a day). The amount of traffic is got by the website depends upon the level of interest in what it is about. The project was strictly aimed at the small scale farmers who didn't surf the web much and thus were not visiting the web-site.

As to the geographic structure of the project web-site visitors in terms of the regions of Ukraine, it is presented in the Chart 1.

CHART 1. STRUCTURE OF THE VISITORS REFERRING TO THE REGIONS OF UKRAINE, %



Source: Own

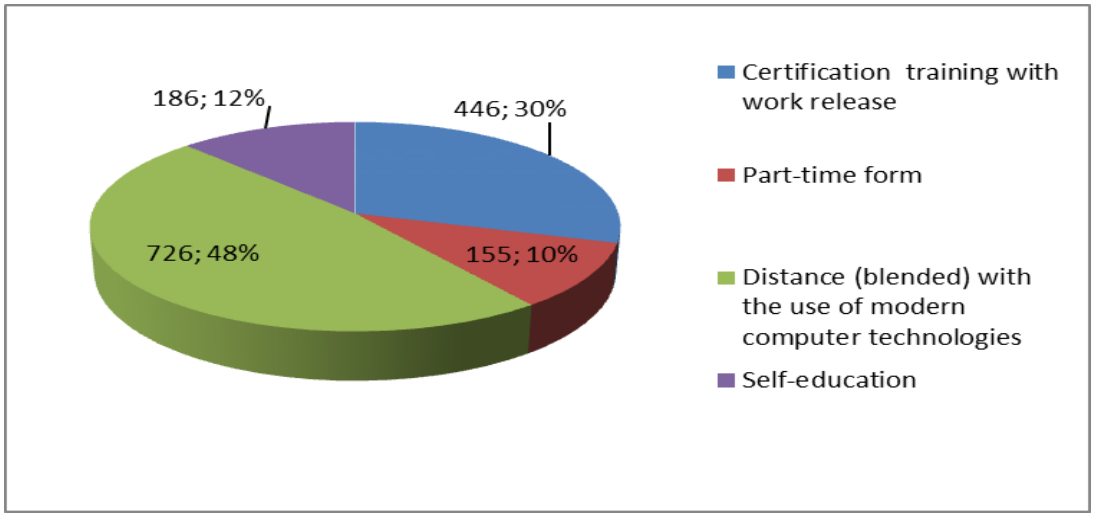
The main visitors of the project web-site come from Sumy, Kiev, Poltava, Odesa, Lviv, Kharkiv, Mykolaiiv and Cherkasy regions. Still, there were no applicants for the on-line course who were not directly contacted within the project scope. This shows low digital engagement of the target audience of the project which are the low scale farmers. Still we may note that the web-site was visited by people of different countries.

The project participants were also interviewed in order to obtain their feedback on satisfaction with the on-line learning process and difficulties they met. Handouts and information provided always pleased the majority of participants in terms quantity and being up-to-date, they also enriched personally and professionally the participants. It means that quality of the modules content did satisfy the majority of the participants. An overall assessment rate of the event level and its content was 4,77 points in average (maximum 5 points).

So Why the Knowledge Society Approach is Still Weak In Ukraine and Other Post-USSR Countries?

The Senior adviser at the Confederation of Finnish Industries Marita Aho (2009) expresses her vision of tomorrow's learning as a blended process of "combining for example e-learning and face-to-face classes, taking a formal course and working at the same time, learning with people with different backgrounds and nationalities, studying part-time and using learning services of both private and public providers". Her statement proves the current trends in modern educational philosophy implementation in the EU. Same, though, may be observed in Ukraine. According to the survey of a Centre for Senior Staff Retraining and Qualifications Improvement of the Ministry of Income and Taxes of Ukraine, which they conducted among their 1513 learners in 2014 (Chart 2), 48% of students defined distance (blended) learning form with the use of modern ICTs as the most desirable form of training. About 30% of respondents supported face-to-face training which means for them a release from their job functions for the training period (Lepekha, Sveshnikov, Demchenko, Kryzhanovs'kyj 2015).

CHART 2 - THE MOST ACCEPTABLE FORM OF CERTIFICATION TRAINING.



Source: Lepekha, Sveshnikov, Demchenko, Kryzhanovs'kyj, 2015

Another interesting point to be noted is that the largest number of students who have participated in online courses have done so hoping that "e-learning courses would be easier to absolve than the traditional classroom subjects". (Nagy 2015, 65) From the other hand, bad management of the teaching and learning process with the use of ICT may become stressful both for a teacher and a students in case they don't possess the necessary competences and don't have the opportunity/time/ability to gain them. Then "the process of learning may be reduced on pure formality which will grow into alienation" (Atanasoska, Andonovska-Trajkovska, Cvetkova 2016, 147). Being honest, teachers need advanced skills and some prior training or experiences for integrating ICT in the educational process. Gaining these skills depends on a number of factors of both subjective and objective nature. The studies of T.Atanasoska and her colleagues (2016, 153) shows that "the teachers use PowerPoint application in Microsoft Office mainly, and they use it every time when they are integrating ICT in the teaching process". Glance and colleagues (2013) found out that "the main tools used in a great number of MOOCs were formative quizzes, short video formats, peer and self-assessment and discussion forums". They consider it as a limitation to the educational abilities of MOOCs, as well as it demonstrates the lack of variety of tools necessary for the effective e-learning design. D.Laurillard (2006) found easy explanation for this phenomena more than 10 years ago: "Most staff using these technologies did not grow up with them". The issue is that this staff teaches the generation which was born within the knowledge society and will be using ICT since the early childhood.

In regard to this issue there is an important UNESCO document "ICT Competency Framework for Teachers" (2011) that defines the competencies for teachers who integrate ICTs into their professional practice. The Framework offers three consequent stages of a teacher's development: technology literacy, knowledge deepening, knowledge creation. Ukrainian educational system is bound to meet the Framework approaches if it is to survive at the world market of educational services.

While the ICT tools potential to enhance the quality and scope of education is becoming ever better in the developed countries, not all universities and schools are able to use this potential possessing fewer resources. The UNESCO world report 2005 "Towards Knowledge Societies" states that "the concept of knowledge societies encompasses much broader social, ethical and political dimensions" (2005, 14). Being the representatives of a post-USSR society suffering from constant economic instability and political drawbacks, we think that namely social and political issues are the macro level obstacles for the knowledge society enhancement. Broad access to knowledge is a political risk of having "free minds", as well as a social risk of a growing number of "unsatisfied" who compared the state-of-the-art in their motherland to the other, more successful countries.

Frank La Rue, Assistant Director General, Knowledge Societies Division, Communication and Information Sector, UNESCO stressed during the world's largest annual gathering of the "ICT for development" community: "We need to guarantee public access to all, while improving content." (WSIS Forum 2017, 6)

Conclusion

The first phase of this comprehensive study was a thorough review of the education literature focusing on issues of the e-learning concept, the Community of Inquiry theoretical framework, lifelong learning in the context of the ICT skills development, pressing need for collaboration within educational content development. Further the authors deepen the research problem into the field of offering educational services to foreign citizens and adults by Ukrainian universities with the use of the ICT technologies.

As a describing background, the paper offers comparison of the general policy trends of ICT skills development and ICT tools support by the EU and Ukrainian government, their perception of the computer-based education under the influence of the new educational philosophy of prosumers. The main finding of this comparison is: the EU together with the UNO units has a strong strategy in this domain. Their approach is based both on comprehensive problem understanding (such as mental issues, psychological techniques) and material maintenance of its development (infrastructure, funding and training programmes). The majority of CIS countries can't boast with something even remotely similar using rather a "got problem – started to look for the solution – while was searching, the client dealt with it somehow" approach. Namely this issue makes it difficult even to use the Internet opportunities designed and launched by other developed countries (Open Education Resources, high quality hardware/software, prosumer philosophy for getting the information you need). Even if we imagine that suddenly the legislation is changed and all educational institutors are well equipped from tomorrow, Ukrainian society will find out that they lack even the teachers with relevant skills of implementation of the ICT tools into the educational process. Same trend is noticeable under the circumstances of a growing Internet speed and thus the quantity of its users, but low awareness of the Intellectual Property Rights protection and of the open education concept. Also, similar challenge is imposed to the legislation in the field of ICT and Internet use. That is why a question for further discussion is: what is the best mode for enhancing the knowledge society in such post-USSR countries as Ukraine?

From this review, a conceptual framework of the successful computer-mediated communication with the learners was assumed basing on the experiences of the research team which were gained during the process of creation of the university curriculum for foreign students (7 years) and adults (4 years), as well as with participating in the professional and career development competences of a university teacher. The analysis of the data and observations obtained during the implementation of the educational projects with the use of on-line resource formed the following conclusions:

- On-line education is powerful tool for the learners having some barriers on their way to the university (as distance, health, finances, lack of time, etc.). Almost 50% of students defined distance (blended) learning form with the use of modern ICTs as the most desirable form of training;

- The insufficient infrastructure (number of computers, low Internet speed, relatively high costs for ICT skills training, etc.), low awareness in ICT and advanced computer skills potential, weak state policy result in low computer skills and low efficiency of digital resources use;

- Limited skills of teachers in the use of ICT skills for the educational process improvement limit the students opportunities for the future, as well as reduce the OER and ICT potential;

Learners coming from the narrow professional field or a specific territory (being the rural residents or foreign citizens) have different requirements towards the learning outcomes, course content and the way it's presented;

- There is a tendency for adults to start training for improving their professional qualifications, as well as for getting a higher degree for the job promotion;

- Broad promotion of the Internet resources of the educational project, without specific skills and serious money inputs, doesn't guarantee a big number of their users, especially if the target audience come from the computer and web-marginalised territories;

- Bad management of the teaching/learning process with the use of ICT may become stressful both for a teacher and a students in case they don't possess the necessary competences and don't have the opportunity/time/ability to gain them;

- A lot of factors define the quality of the course and its future applicability by the students: educational and cultural background, cognitive skills, teaching approaches used by previous teachers, places of future knowledge application (both in geographical and management-practice sense).

The results gained were proven by the experiences of other teachers in Ukraine, that's why the further scientific work may lay in search of the modes of prosumers philosophy development in terms of a teacher and a student specifics. Next, there is also a need of developing the creativity in ICT use both by teachers and students, development of their critical thinking and self-managing learning skills.

As it may be seen from the overview and observations results given above the last decade in the EU and Ukraine is known as a period of intensive recognition of the educational needs of the knowledge society due to arisen opportunities that the ICT offers for the educational system. Majority of the critical principles of e-learning design include giving some level of control to the learner (like pushing the pause or forward button during the on-line course) who becomes a prosumer: a producer and a consumer at the same time. The Community of Inquiry framework theory developed between 1997 and 2001 assumes that "knowledge

can be constructed through social negotiation and that discussion with others - peers or tutors" (Amemado, Manca 2017, 24)

Our society has been fundamentally changed by the impact of the Internet which means that increasing instability of employment and professions may be reduced by the development of people competences in enhancement of the emerging knowledge society of sharing. Adult education (both of teachers and other adult citizens) is an essential condition for its development. The range of possible benefits covers practically all areas of social life where knowledge and communication are crucial: "from improved teaching and learning processes to better student outcomes, from increased student engagement to seamless communication with parents, and from school networking and twinning to more efficient management and monitoring within the school" (UNESCO 2011, 4). However, much work is still to be done before we truly realise what a worthwhile educational experience can be delivered on-line.

Acknowledgements

The authors would like to thank the European Bank for Reconstruction and Development (EBRD) and Food and Agriculture Organization (FAO) for the opportunity to participate in the two stages of the project "Successful Grain Agribusiness in a Small Area" (2014-2016), supported by "Central European Initiative". The received statistical and empirical data gathered a valuable data base for the analysis and empirical conclusions presented in this publication.

References

Aho, M., 2009. "Learning in and for the knowledge society". Open Education Europa. https://www.openeducationeuropa.eu/en/article/Learning-in-and-for-the-Knowledge-Society, accessed 22nd May 2017.

Amemado, D., 2014. "Integrating Technologies in Higher Education: the Issue of Recommended Educational Features Still Making Headline News". Open Learning: The Journal of Open, Distance and e-Learning, pp. 28-29.

Amemado D., Manca S., 2017. "Learning from Decades of Online Distance Education: MOOCs and the Community of Inquiry Framework". Journal of e-Learning and Knowledge Society Vol. 13, No 2, pp. 22-25. http://www.je-lks.org/ojs/index.php/Je-LKS_EN/article/view/1339, accessed 22nd May 2017.

Atanasoska, T., Andonovska-Trajkovska, D., Cvetkova, B., 2016. "Use of the Internet – Support for Teaching and Learning in the Primary Education in Macedonia". The 11th International Conference DisCo 2016: "Towards Open Education and Information Society", 20th to 22nd June in Prague. pp. 147-156.

Baddeley, A. D., Hitch, G. J., 1974. "Working Memory". In Bower, G.A. The Psychology of Learning and Motivation: Advances in Research and Theory. New York: Academic Press. pp. 47–89.

Business of Zacarpathia, 2016. "The Coverage of the Internet in Ukraine for the First Time Exceeded 60% - Statistics". Business of Zacarpathia. http://www.businessz.com.ua/news/events/616, accessed 2nd June 2017.

Deloitte Limited, 2014. "A Quick Guide to EU Funding 2014 – 2020". Deloitte Limited, Grants & Incentives Unit (5-7). https://www2.deloitte.com/content/dam/Deloitte/cy/Documents/finance/CY_Finance_EUFunding2014-2020Guide_Noexp.pdf, pp. 5-7 accessed 22nd May 2017.

Derevianenko, O., 2016. Report "ICT in Education. Strategy and Priorities", Mninistry of Education and Science – Parliament Hearings. http://osvita.ua/school/49783/, accessed 2nd June 2017.

EUROSTAT, 2011. "Adult Education Survey (AES)". EUROSTAT. Your Key to European Statistics. February 2012. http://ec.europa.eu/eurostat/web/microdata/adult-education-survey, accessed 22nd April 2017.

EUROSTAT, 2017. "Digital Economy and Society Statistics - Households and Individuals". EUROSTAT Statistics Explained. February 2017. http://ec.europa.eu/eurostat/statistics-explained/index.php/Digital_economy_and_society_statistics_-_households_and_individuals), accessed 2nd June 2017.

Garrison, D. R., Anderson, T., Archer, W., 2000. "Critical Inquiry in a Text-Based Environment: Computer Conferencing in Higher Education Model". The Internet and Higher Education, 2 (2-3). pp. 87-90.

Glance, D. G., Forsey, M., Riley, M., 2013. "The Pedagogical Foundations of Massive Open Online Courses". First Monday, 18(5).

Laurillard, D., 2006. "Rethinking University Teaching: a Framework for the Effective Use of Learning Technologies". Abingdon, Oxon., RoutledgeFalmer.

Lepekha, O. Y., Sveshnikov, S. M., Demchenko, H. V., Kryzhanovs'kyj, V. I., 2015. "European Experience in Implementing the Latest Learning Technologies in the System of Professional Development of Tax Authorities". Centre for Retraining and Qualifications Improvement of the Senior Staff of the Ministry of Income and Taxes of Ukraine. http://2015.moodlemoot.in.ua/course/view.php?id=80, accessed 22nd May 2017.

Lipman, M., 1991. "Thinking in Education". Cambridge: Cambridge Univ. Press.

Petegem, W. V., 2009. "Learning in and for the knowledge society". https://www.openeducationeuropa.eu/en/article/Learning-in-and-for-the-Knowledge-Society, accessed 2nd May 2017.

Nagy, P.K., 2015. "College Students' Motivations for Signing up for E-learning Courses". DISCO 2015 From Analog Education to Digital Education. Center for Higher Education Studies, Prague. p. 65.

Peters, A. M., Britez, G. R., 2008. “Open education and education for openness“. Sense Publishers, Roterdam. https://www.sensepublishers.com/media/729-openeducation-and-education-for-openness.pdf, p. 3 accessed 22nd April 2017.

Statistical Bulletin, 2017. "Status and Development of Ukraine's Communication for 2016". State Service of Statistics of Ukraine. http://www.ukrstat.gov.ua/druk/publicat/Arhiv_u/08/Arch_zva_bl.htm, accessed 2nd June 2017.

UNESCO, 2011. “UNESCO Information and Communication Tools Competency Framework for Teachers”. http://unesdoc.unesco.org/images/0021/002134/213475e.pdf, accessed 2nd June 2017.

UNESCO, 2005. “Towards Knowledge Societies” UNESCO World Report 2005. http://unesdoc.unesco.org/images/0014/001418/141843e.pdf, p. 21 accessed 3rd June 2017.

UNO General Assembly, 2015. „Transforming Our World: the 2030 Agenda for Sustainable Development“ Resolution adopted by the General Assembly on 25 September 2015. http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E, accessed 2nd June 2017.

WSIS Forum, 2017. “WSIS Action Lines: Information and Knowledge Societies for SDGs Version 1.0”. The World Summit on the Information Society. Outcome Document. International Telecommunication Union (ITU), Geneva. https://www.itu.int/net4/wsis/forum/2017/Content/docs/outcomes/WSISForum2017_ForumTrackOutcomes.pdf, p.6 accessed 3rd June 2017.

Consulted Websites

Merriam-Webster Dictionary on-line: https://www.merriam-webster.com/about-us

Wikipedia https://www.wikipedia.org/

Open Source Website: https://opensource.com/resources/what-open-education

UNO Website: http://www.un.org/sustainabledevelopment/sustainable-development-goals/

Open Education Europa Portal: https://www.openeducationeuropa.eu/en/article/8-things-educators-need-know-about-copyright-and-open-resources

The Community of Inquiry: https://coi.athabascau.ca /

Brick Marketing Company: http://www.brickmarketing.com/blog/how-many-website-visitors.htm

Help Everybody Everyday: http://www.helpeverybodyeveryday.com/websocial-media/2094-how-much-traffic-should-your-website-get