

STATE OF THE ART REGARDING E-LEARNING AND ICT FOR LIFELONG LEARNING

Deliverable 1.1

Work package 1: Scoping and Needs Analysis



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INTRODUCTION

Lifelong learning (LLL) is becoming more and more attractive and popular throughout the world. It opens wide and unlimited opportunities of learning for all the people with different ages and nations. Lifelong learning serves not only to make people more employable, but also to further their personal development and encourage active citizenship and social inclusion.

Lifelong learning first became a buzzword in Europe in the mid.1990s. It has been part of the EU's policy response to a fast-changing world ever since. It has been developing and growing rapidly for about 25 years because of the continuously raising demand.

E-learning is one of the best tools for lifelong learning. It is generally seen as the use of ICT and the internet for learning. Almost all countries in the world indicate that e-learning is a tool for education, but e-learning is still a new phenomenon when it comes to LLL.¹

This report aims to describe the current situation with regard to the level of development and the use of tools of e-learning and lifelong learning in Armenia and Georgia. It includes the monitoring analysis of lifelong learning and e-learning on a national level in Armenia and Georgia, as well as an analysis of the situation on the institutional level for:

- Institute of Informatics & Automation Problems of NAS RA,
- Orbeli Institute of Physiology of NAS RA,
- State Engineering University of Armenia,
- Armenian State Pedagogical University after Kh. Abovian,
- Ivane Javakhishvili Tbilisi State University,
- Georgian Technical University,
- St. Andrew the First-Called Georgian University

¹ http://www.etf.europa.eu/web.nsf/pages/Lifelong_Learning

The report describes the current situation and provides SWOT analyses of this situation in the framework of the further development and implementation of e-learning and lifelong learning.

This report will serve as the starting point for the further development of a joint vision, strategy and implementation of e-learning for LLL in the broader framework of the ARMAZEG project (D1.3). The report also makes an inventory of other relevant EU projects in the field of e-learning and lifelong learning to see where collaboration is possible and to avoid overlaps. To collect input for this report, each partner was asked to complete a form (see Annex 1). The partners filled out these forms based on institutional and national documents and reports. Another important source of information were interviews conducted locally with students, teaching staff, decision makers, members of the national e-learning networks etc.

**THE CURRENT SITUATION OF E-LEARNING
AND LIFELONG LEARNING ON THE
NATIONAL LEVEL IN ARMENIA AND
GEORGIA**

THE CURRENT SITUATION IN GEORGIA

Implementation of the modern Information and Communication Technology (ICT) in the learning process at the different levels of education is very intensive in Georgia nowadays. Technology-enhanced learning offers innovative solutions to the challenges facing the traditional educational process. Strict limitation in time and space - the main barrier, which is facing learners of different ages, attitudes and culture - is considerably relaxed with the flexible learning process, enabled and supported by the usage of modern technology in different types of education.

First successful attempts of e-learning and LLL solutions, realized with ICT, have been already implemented in the Georgian educational environment. The project supported by the Georgian Government "Netbooks for Primary Schools" was successfully implemented in the primary schools at the National level. Within the frame of the project all pupils in the primary schools have been equipped with the Net-books, designed to enhance the face-to-face (F2F) learning process and give them individual working space to master new material explained by a teacher at class.

For the secondary schools the project "Virtual laboratory" was implemented. The aim of this project was overcoming the lack of physical laboratories in natural sciences. For this, virtual laboratories were purchased for a number of schools in Georgia, especially for the schools in rural regions. These laboratories are used in class, as a part of traditional F2F learning. Many schools are using e-journals, e-gradebooks, e-assessment and e-assignments in order to create successful learning process by shifting some activities into the e-learning environment. This practice is very popular among the learners, as modern learners are very keen on technology and welcome every activity, which is based on technology.

Technology-enhanced learning is becoming more and more widespread in the Higher Educational System as well. E-learning is implemented in different areas of the learning process and for different purposes (distribution of the learning material, assessment, assignments, communication, etc.), but the main characteristic is that e-learning is used in blend with the traditional learning.

In 2012 several Higher Educational and Research Institutions established the "National E-Learning Network". The founders of the Network are representatives of:

- Tbilisi State University (TSU);
- Georgian Technical University (GTU);
- Chiqobava Institute on Linguistics;

Later other institutions joined the network. At the moment about 15 organizations are members of the network. In 2013 St. Andrew the First-Called Georgian University (SANGU) became a member of the network as well.

The main aim of the network is the popularization of e-learning at the national level and the support of organizations who are interested in implementing technology-enhanced learning in their educational systems. A recent activity of the network was a series of trainings for the representatives of Vocational Training Institutions in order to develop capacity for e-learning there.

The National E-Learning Network is a member of Regional e-Learning Network (Armenia, Azerbaijan, Georgia), which was established within the frame of the GIZ project "Capacity Building and Human Resource Development in Caucasus".

A lifelong learning system was very well developed in the Soviet time. But, the educational system as a whole and the LLL system in particular, were badly affected by the severe economic and political crises, occurring after the crash of the Soviet Union. At the moment a new concept of LLL is developing, and e-learning could serve as a very effective tool in order to create and distribute lifelong learning solutions. E-learning courses developed for LLL could significantly broaden the target group of the learners interested in continuous education. The usefulness of such courses would be increased if these courses are developed in the higher educational institutions, with the contribution of the experienced subject matter experts.

THE CURRENT SITUATION IN ARMENIA

Lifelong learning and e-learning are not new attitudes in Armenia. The Law of the Republic of Armenia on “Higher and Postgraduate Professional Education” was adopted in 2004. This law regulates the system of higher and postgraduate professional education in the Republic of Armenia making certain reflections on lifelong education, as well as on the growth of the level of professional qualification of the specialists and their training. In 2008, within the framework of the State Program of the Republic of Armenia on the development of education in 2008-2015, the Ministry of Education and Science of the RA initiated the work on amendments to the “Concept Paper on Lifelong Learning” and on a new law on “Adult Education” or to the existing laws, which are, at present, in the development and implementation phases. Under the conditions of absence of the Law on Adult Education in the Republic of Armenia, at present, a certain system of state regulation of that field is also missing. However, a number of Ministries (RA Ministry of Education and Science, the Ministries of Justice, Health Care, Culture etc.) and agencies (RA Police, Custom’s, Tax and other services) organize training and quality raising courses for the specialists, working in their respective fields as well as for the unemployed and job seekers organized by the RA Ministry of Labour and Social Affairs. As a centralized system of governance in the field of adult education and learning is missing, the adult education and learning in the Republic of Armenia is decentralized. It is organized and implemented by the state as well as private organizations and NGOs, like Lifelong Learning League, which is an umbrella for 12 non-governmental organizations experienced in education and training in Armenia. The overarching goal of the League is to support the formation of lifelong learning culture in the country by means of developing a coherent LLL system focused on employability/adaptability, personal fulfilment, active citizenship and social inclusion. There is also the Lifelong Learning Association which is implementing the main activities in the sphere of LLL. In the field of Adult Education and Learning Armenia cooperates with a number of international organizations (dv international, GIZ, World Bank, USAID, UNDP, OSI AF Armenia, Eurasia Foundation, EC, British Council) and with a number of countries (Germany,

Norway, Denmark, USA, Netherlands).² A huge input regarding e-learning comes from GIZ (German Federal Ministry for Economic Cooperation and Development). Since 2008 the purposed training of trainers were implemented for most Armenian educational organizations within the project of "Capacity Building and Human Resource Development in Caucasus" on behalf of InWent, and then GIZ.

Though many Armenian public and private organizations have their own strategy and approaches to the implementation of e-learning, there was no formulated network or coordinating organization yet. As a result of the cooperation within the mentioned project the mission of e-learning was formed, potential partner institutions were defined and pilot projects were implemented in 2008-2009. And finally, in 2010 the Armenian E-learning Network (ArmeLNet) and E-learning centre was founded. Eight organizations signed the official memorandums and became the full members of ArmeLNet:

- National Centre of Educational Technologies.
- Academy of International Education.
- "IATC" Educational Fund.
- Yerevan State Linguistic University.
- Yerevan State College of Humanities.
- Yerevan State College of Informatics.
- State Employment Service Agency of RA.
- State Engineering University of Armenia.*

In 2011 the Armenian E-learning Network also became a full member of the Caucasus E-learning Network together with Georgia and Azerbaijan. The annual training of trainers regarding e-learning has been implemented for the Higher and Vocational educational institutions of Armenia, and about 15 new organizations joined the ArmeLNet. The mission of ArmeLNet became the promotion of e-learning to the Armenian Educational landscape, and the goals are to support member organizations in the development and deployment of e-

²http://www.unesco.org/fileadmin/MULTIMEDIA/INSTITUTES/UII/confintea/pdf/National_Reports/Europe%20-%20North%20America/Armenia.pdf

* SEUA is the partner involved in ARMAZEG project, who is the full member of ArmeLNet and Caucasus E-learning Network.

learning activities and implement quality assurance of e-learning courses and modules produced by its members by providing an effective assessment tool (Caucasus e-Learning Quality Assessment, it will be provided in annex). As a result of the cooperation between ArmeLNet and these trained organizations there was an exchange of experts, content, e-courses, trainings, resources, design of new educational programs and e-courses, monitoring of e-learning implementation and development process in educational organizations (Figure 1).

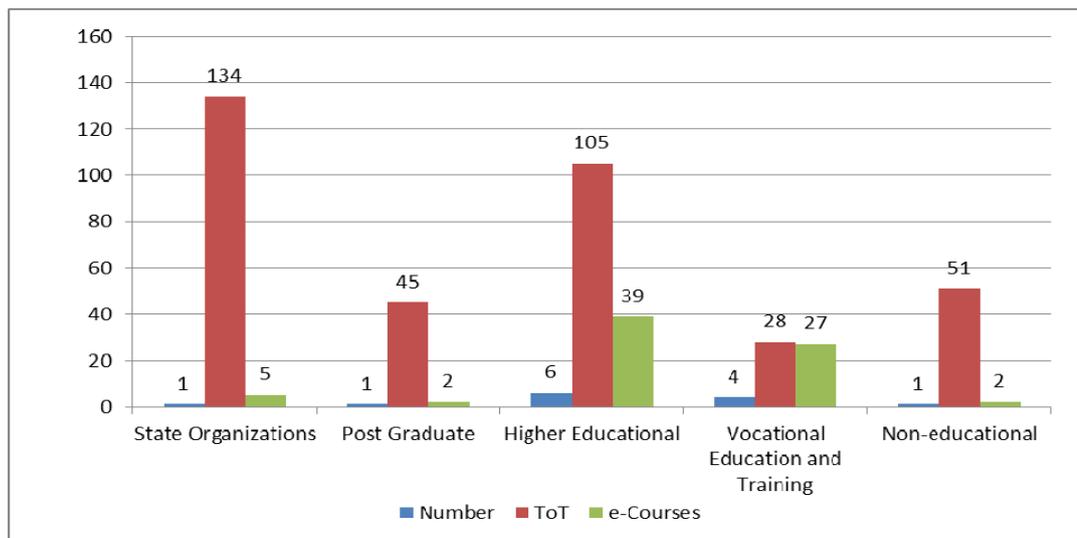


Figure 1. Results of Institutional Development

**THE CURRENT SITUATION OF E-LEARNING
AND LIFELONG LEARNING ON THE
INSTITUTIONAL LEVELS**

1. THE INSTITUTE OF INFORMATICS & AUTOMATION

PROBLEMS OF NAS RA (IIAP)

CURRENT STATUS

E-learning as an official learning form cannot be considered as conventional in Armenia. CSIAM is a new player in the field of e-learning and lifelong learning. CSIAM (Centre for Scientific Information Analysis and Monitoring) is one of the scientific departments of the Institute for Informatics and Automation Problems. Although the Centre has no previous experience in e-learning, being a part of IIAP will allow the Centre to avoid many problems regarding infrastructure (reliable access to technology, appropriate bandwidth, compatibility of software and hardware, equipment etc.).

The participation in the ARMAZEG project will allow CSIAM to start the process of implementing e-learning.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> • Awareness of the advantages of e-learning and readiness to engage in it, • Equipment for conferences, • Access to academic e-libraries, • IT literacy of the institute staff. 	<ul style="list-style-type: none"> • Lack of previous experience, • Complexity of accurate, comprehensive and objective evaluation of the effectiveness of e-learning technologies.
Opportunities	Threats
<ul style="list-style-type: none"> • Rise of the educational level, • Knowledge dissemination, • Rise of the flexibility for potential student which will contribute to the LLL, • Improvement and diversification of the educational system, • Development of e-learning content. 	<ul style="list-style-type: none"> • High competition with foreign universities providing distance education, • Non-existence of standards on e-learning on a national level in Armenia, • Non-linear development of e-learning

TARGET GROUP OF CSIAM

The target group for CSIAM are students, PhD students, scholars, and editors of scientific journals. People involved in statistics and decision making in education and science can also be considered as a target group

PROJECT TARGET GROUP

At the first stage the main stakeholders will be the members of CSIAM, State Committee of Sciences and Ministry of Education and Science. In future CSIAM can collaborate with other research centres involved in Scientometrics/Bibliometrics and present the joint e-courses. This will help to deepen the international contacts and attain a new level. Furthermore, the successful scenario for IIAP will be the fact that other departments of IIAP may also take part in e-learning and lifelong learning process in the future.

2. THE ORBELI INSTITUTE OF PHYSIOLOGY OF NAS RA (OIPH)

CURRENT STATUS

Orbeli Institute of Physiology has modern equipment and can mostly cover the requirement of the e-learning process. The institute has a Laboratory of Electronic Microscopy which is supplied with microscopes of different particularity for certain courses. It also has the ability to organize videoconferences in the conference hall.

New skills must be learned by the staff to meet the needs of quality e-learning. (Sherry and Mores, 1995). Unfortunately, like other institutions and scientific organizations in Armenia, the institute has not well-trained and skilled academic and management staff in this area. Recently the staff received an advanced training in distance and open learning funded by TEMPUS (NAS of Armenia, Yerevan, 2014), still there are many gaps in this field.

The students also aren't involved in such programs yet. Introduction of interactive e-learning could boost distance education and directly contribute to the quality of education.

OIPH is going to use Moodle as an e-learning platform. There is already a lot of experience in organizing video conferences and webinars. The required infrastructure for this is also already in place.

There is need to continue training in all aspects of distance education including modern management, computer skills development, information technology, printing technology, media production, mass communication, communication skills development, environmental control, editing, MOOCS (massive open online courses) writing etc. These trainings will be very helpful for the staff to be able to introduce and run new technologies for e-learning.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none">• Some appropriate equipment, and high qualified tutorial stuff.• Access to academic e-library.• Experience through e-learning pilots and	<ul style="list-style-type: none">• Technical Infrastructure issues i.e. video equipment not fit for purpose.• IT literacy of the institute staff.• Not all staff engaged/supportive of e-

<p>understanding of the National Learning Management System.</p> <ul style="list-style-type: none"> • Ability to link scientific experience to educational process. • Infrastructure for video conferencing 	<p>learning.</p> <ul style="list-style-type: none"> • Lack of high-quality e-learning training material both for students and teachers. • The staff is not involved in delivering e-learning and has no experience in this field.
<p>Opportunities</p> <ul style="list-style-type: none"> • Can engage subject matter experts within our department who then can use e-learning as a blended solution • Increase the number of those receiving training • Ability to link competencies to training • Improvements of educational system • E-learning content development 	<p>Threats</p> <ul style="list-style-type: none"> • E-learning being seen as not cost effective. • (Non)-existence of standards on e-learning on a national level in Armenia • Commitment of academic staff to implement e-learning, readiness of academic staff for changes in teaching process

GOOD PRACTICES

A successful example of e-learning implementation is Armenian college, which teaches Armenian to Armenians in different parts of the world. Other example is the American University Armenia, which has courses on different subjects using Moodle platform.

Another best practice and one of the prominent parts of distance learning in Armenia are the video conferences and the webinars that are organized by our institute.

TARGET GROUP OF OIPH

The main accent of Orbeli Institute of Physiology is on postgraduates, post-docs in biomedical sciences. Also specialists in Biology, Biochemistry, Physiology, Medicine and applied sciences can be considered as our target group (in the framework of continuing education and alumni activities).

3. ARMENIAN STATE PEDAGOGICAL UNIVERSITY AFTER KHACHATUR ABOVIAN (ASPU)

CURRENT STATUS

Organizational implementation

The university is strongly committed to the implementation of e-learning as it was mentioned in the university strategic plan³, however ASPU is still at the initial stage of this process. There is a special department responsible for the organization of e-learning and lifelong learning. The department implements separate components of teaching and learning. A combined management of the educational and technical dimension of e-learning has not been realized yet. The team responsible for supporting the Moodle platform does not have enough capacity to manage all operations [1].

Currently ASPU is using ICT software, developed by the university programmers' team, for the solution of local problems. The team provides technical support to e-learning with business architects to develop a set of ICT standards and workflows that satisfy current and future requirements. The work spans the product lifecycle of research, selection, introduction and maintenance of all ICT infrastructure components. They determine the best technological path for the university to be going forward and commission the work to attain the goals.

The software solves problems concerning general administration, curriculum development, management of curriculum, electronic statements, electronic deanery, testing system, admissions and teachers, students and university's workload. These processes control the introduction of hardware and software changes in the operating environment, guiding activities in both operational and test environments.

Available infrastructure

³ <http://armspu.am/home/ln/en>. University development strategic plan 2011-2015

This set of processes covers the day-to-day work required to monitor and maintain a stable IT infrastructure and operating environment. Some of the tasks associated with the processes are job scheduling, data management (including backup and recovery management), multifunctional command centre, physical database administration and proactive hardware maintenance. This technology allows digital collaboration to occur. Digital collaboration is the use of technology to enhance and extend employees, teachers and students abilities to work together regardless of their geographic proximity. Digital collaboration includes electronic messaging systems, electronic meeting systems, online communities of learning organized by subject where students, teachers and employees can access interactive discussion areas and share training content and web links, and document-handling systems with collaboration technologies that allow interpersonal interaction.

For provision of the necessary bandwidth the team uses methods of dynamic content synchronization. For the students and teachers the computers and internet are an indispensable element of their study environment. Each student and teacher has access to their own account from everywhere. The system ensures necessary tools for e-learning process.

For normal operation of the software some of the equipment was bought and the rest of them were rented. The provided equipment ensures the normal work of software. The data from students, teachers and learning process is regularly saved on annual bases.

Staff development and support

The academic staff that will be involved in the e-learning process needs to be trained. Those who are more familiar and used the system previously share their experience with colleagues trying to encourage and motivate them to use e-learning for teaching [2]. Training materials are not developed yet.

Support staff has high level of e-literacy and general knowledge of e-learning. Later this experience will be provided for a newly developed education management master degree programme. Own resources are limited and there is no external funding available.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> • Several classrooms equipped for e-learning. • Good preconditions for organizing webinars. • New library with capability for research and equipped with e-reading hall. • Quality assurance mechanisms for e-learning assessment • Operating electronic system for registration and academic data management. • University commitment to e-learning strategy and development • Involved within schools and education authorities • Electronic lectures, seminars and workshops • High interest of students and staff in implementation 	<ul style="list-style-type: none"> • Lack of support services for students. • Lack of experienced staff • Lack of technology and software • Lack of adequate resources/funding • Greater mix of diverse backgrounds of students
Opportunities	Threats
<ul style="list-style-type: none"> • State funding availability • Gain international experience. • Trainings of technical and teaching staff at the partner universities. • Virtual internship opportunity for students. • Implementation of partners' experience. • Improvements of education quality by the use of European standards. 	<ul style="list-style-type: none"> • Organizational change/restructuring. • High cost of e-learning. • Resource consuming and demanding. • Low utilization by students of e-learning materials.

The students have intermediate level of e-literacy and digital information skills and further training is required **[3]**:

- Lack of basic information about how to navigate the course site on the welcome screen or course home page.
- Huge diversity of students' level of prior IT knowledge.

GOOD PRACTICES

The University has created a comprehensive development program that addresses four key areas of readiness regarding the establishment of an e-learning centre: the institution, faculty, courses, and learners (see Annex 2). They can be used to generate a checklist to help institutions and faculty evaluate which aspects of their program or courses need attention.

TARGET GROUP

The target group of e-learning at the university are the students.

Stakeholders are: the university administration, the ICT staff and the teaching staff.

4. STATE ENGINEERING UNIVERSITY OF ARMENIA (SEUA)

CURRENT STATUS

Organizational implementation

SEUA is a leader technical university in Armenia with a large amount of resources, administrative and academic staff and students. It was one of the first educational institutions which started implementation and usage of e-learning in its educational processes. The university has created its own e-learning system (mainly a collection of resources), which has been used many years so far. At the moment though this system is not operative anymore. Every year new trainings for teachers are held, and most of their courses were adapted and transformed into e-learning format. SEUA is a member of the Caucasus and Armenian E-learning Network and has two e-learning specialists certified by GIZ (German Federal Ministry for International Cooperation and Economic Development). However, most of the e-learning technologies and teaching methodologies have become old, and now is the best time for SEUA to change and renew its e-learning development policy and innovate its current system, software and all e-learning components.

SEUA has its own department of Continuous Education, which was officially reformulated in 2012. It was established on the basis of previous Centre for Academic Excellence and implementing the functions of resolved centre, where the trainings of academic staff on e-learning were held. The Centre of Continuous Education has been equipped with ICT and has high-speed internet, it involves Microsoft IT Academy and Cisco Network Academy. In the new centre the academic staff of SEUA is provided with popular trainings of Microsoft solutions and Cisco Network Academy, so that this trained staff is also elaborating new curriculums and learning programs, based on these trainings. But these skills are mainly technical and there still remains a huge work to do regarding the implementation of e-learning by developing instructional design, content development and online tutoring skills of the academic staff and preparing the joint e-platform and e-courses not only for lecturers, but also for students as a part of their learning process.

In 2013 the modern laboratory ANEL (Armenian National Engineering Laboratory) was established at SEUA. It aimed at strengthening the educational capacity and enhancing the research potential of the State Engineering University by upgrading and expanding its laboratory facilities and teaching skills. New equipment and technologies of this laboratory can be used both for lifelong learning and for e-learning.

Available infrastructure

SEUA is the most famous and leading technical university. So speaking about the existing infrastructure, it can be declared, that the university is provided with all needed infrastructure: it has equipped computer labs, high-speed internet, projectors, audio systems etc., which can be used for e-learning. As it was also mentioned, the new opened Laboratory centre ANEL also has appropriate modern infrastructure, and all these are free and open to use for university staff and students. Therefore, new engineering courses can be created and provided in e-learning format.

SEUA has also one of the biggest libraries among all HEI of Armenia with a huge basis of electronic resources. This library is accessible for registered students and academic staff of the university. The library has local and global internet access and is equipped with approximately 80 computers connected with the local area network. All the resources of the library are also available for the implementation and development of e-learning at SEUA.

Staff development and support

The major part of the university staff is not familiar with e-learning technologies at all. But because of academic and administrative staff mostly consists of specialists with age over 40, the need for lifelong learning and e-learning is increasing. Both the academic and also administrative staff in the future will be involved in e-learning trainings within the project in order to develop and spread over the university. There is also an IT department with competent specialists, who are ready to support the implementation processes. As SEUA is a full member of Armenian E-learning Network, the adapted training materials and open-source software on e-learning can be used for trainings of trainers.

Two certified e-learning specialists, who are both members of SEUA academic staff, and full members of Armenian E-learning Network, can provide consultancy and training support for the implementation and development of e-learning, as well as make quality assurance and coordination of all needed resources and organizational processes.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> • Major part of academic staff, ready for changes in learning technologies. • Several equipped laboratories and specialized department of LLL. • Local and international relationship and cooperation with State and Foreign HEI, who are more or less familiar with LLL and e-learning main principles. • Large base of electronic resources open for students and lecturers. • Existence of IT specialists and subject matter experts. • Experience of usage different e-learning tools. Namely, LMS systems (Moodle, Blackboard etc.), e-learning open-source software (eXelearning, Audacity, Sound Forge, Hot Potatoes etc.). • Local and Worldwide internet connection; • Experience in instructional design and online tutoring. 	<ul style="list-style-type: none"> • Insufficient capacity of existing computer lab classes; • Lack of e-learning resources, for instance the specialized equipment for recording learning content (lectures, videos, etc.); • Fear of new approach to learning among those, who are used to traditional, paper-based approach to learning; • Insufficient legislation; • Insufficient funding; • Insufficient e-learning resources; • Lack in LLL conceptual methodology; • Lack of staff familiar with e-learning.
Opportunities	Threats
<ul style="list-style-type: none"> • Development of international and national relationships and cooperation, exchange of national and 	<ul style="list-style-type: none"> • Dependence on funding from grant projects, insufficient regular funding; • Dependence on the technology;

<p>international experience.</p> <ul style="list-style-type: none"> • Growth of rank and competitive advantages in national and international market. • Opportunity to make e-learning more official and acceptable on governmental level. • Opportunity to meet new stakeholders and be involved in new international projects. • Development of LLL and e-learning within the University. • Opportunities for new trainings of academic and administrative staff not only within but also outside the project. • Opportunities for students and academic staff to make researches in e-learning and LLL. • Opportunities to reduce the overall costs due to new technologies and e-learning implementation within the University. • Opportunity to involve students in the processes of content development, instructional design and online tutoring, etc. 	<ul style="list-style-type: none"> • Quite sufficient initial costs; • Rejection from those, who are used to the traditional approach to learning and have fear to be out of the processes if technology-enhanced learning is implemented; • Restrictions or rejection of e-learning policy documentation.
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GOOD PRACTICES

SEUA was the first HEI which had established its own e-learning system. This system was used for annual trainings of academic staff. It was mainly a repository for resources, e.g. case studies, lection packages, questionnaires etc. Unfortunately, now this system is out of date, and the functionalities are not appropriate for modern e-learning requirements.

Several departments have now been using Moodle and have prepared several e-courses, which had very high efficiency in students' learning performance.

TARGET GROUP

The target group of e-learning for SEUA are bachelor and master students, academic and administrative staff, national and international stakeholders, external educational market.

5. IVANE JAVAKHISHVILLI TBILISI STATE UNIVERSITY (TSU)

CURRENT STATUS

Organizational implementation

At TSU e-learning was introduced in 2007 at the Faculty of Exact and Natural Sciences. Since 2009 the e-learning coordinator belongs to the Office of Information Technologies Services. Since 2009 trainings in e-learning skills and educational technology for e-learning coordinators and faculty representatives have been organized. Despite the above some faculties still do not have a person responsible for e-learning administration at faculty level and according to deans of TSU faculties, training of academic staff is necessary since most of them do not know about e-learning at TSU.

TSU has its own e-learning platform (Moodle) with a centralized server. Up to 600 e-courses have been created on this platform, 376 courses are active and more than 200 courses are archived. TSU has 6 faculties and active e-course distribution is the following: Faculty of Exact and Natural Sciences - 170 active e-courses, Faculty of Humanities – 95 active e-courses, Faculty of Social and Political Sciences – 80 e-courses, Faculty of Medicine – 19 e-courses, Faculty of economics and Business Administration – 12 e-courses, Faculty of Law – 0 e-courses. Many of these e-courses contain just one or two files and typical use of Moodle is as file repository.

A pilot multimedia e-learning course has been created for each faculty. Though some of these multimedia course professors/authors say that just lecture capture in class as it was made is not sufficient for efficient content delivery and a more sophisticated approach is needed.

Together with the Quality Assurance Service of Tbilisi State University, an e-course standard was elaborated in 2010, to serve as a guideline for e-course creation at TSU, though this e-course standard was never used in practice and therefore must be revised in order to be compatible with real needs of academics.

The problems we experience at TSU when developing e-learning are the following: understanding of importance of e-learning and motivation of academic staff, IT literacy, lack of staff trained in e-learning, e-learning related quality assurance integration into the traditional learning setting, lack of standard e-

learning related procedures, e.g. who is responsible for what and who is reporting to whom etc.

TSU, as well as the Georgian Technical University that is also participating in the ARMAZEG project, are members of the National e-Learning Network. The very tight cooperation between the members of the network is an additional support for the sustainable development and implementation of e-learning and LLL at all levels of the organization.

At TSU the infrastructure for e-learning is partly developed: for current needs the centralized server is absolutely enough to guarantee access to e-learning courses. At TSU there are computing classes which can be used for e-learning. There is a space, which can be dedicated to hosting an e-learning centre. Mainly free open source software is available. The technical support faculty staff is responsible for maintenance and update of the technical infrastructure: network, servers, etc. at the faculties and department. Individual professors are also using a testing module in Moodle to assess their students' achievements.

To finance the e-learning efforts on curriculum and course level, the TSU team will apply for national and international funding. The goal is also to work closely with employers and industry to enable, where appropriate, expansion and development of work based-learning.

Lifelong learning at TSU

After joining the Bologna Process in 2005, higher education institutions of Georgia were obliged to implement the core principles of this process. One of these principles is that LLL is one of the major pre-conditions for the integration in the pan-European educational space. So far however, there have been no relevant changes in the institutional structures and strategic plans made for the capacity building of University Lifelong Learning (ULLL).

Development of ULLL is mutually beneficial to the society and the HEIs as the society receives wider access to the university intellectual resources and experience, while the universities find their crucial role in addressing the demands of the market. This will result in establishing relative economical

sustainability of HEIs (especially public universities that face strong financial problems).

To support continuing education at TSU, the Centre for Academic Development and Continuing Education has been established. To meet the centre's primary objective, the staff of the centre will provide administrative services and continuing educational programs to meet the needs of Georgia as well as organizing various training and seminars to train university's academic and administrative personnel.

Programs of academic development and continuing education can be divided into two categories: internal ongoing education for the TSU faculty and continuing education for Georgia in general. Firstly, the centre will conduct internal ongoing education by organizing various conferences and seminars for current TSU faculty and administrative personnel. Secondly, based upon questionnaires and scientific surveys assessing the educational, technological and business needs of Georgian society, TSU will design various long and short term courses/trainings/programs to develop general or specific professional skills. In addition to the continuing education programs mentioned above, there are 13 accredited programs for teachers' professional development at TSU.

For the moment TSU Centre for Academic Development and Continuing Education is not interested in e-learning activities developed in the framework of ARMAZEG project. Therefore e-learning activities related with LLL will be under TSU's e-learning centre.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> • Dedicated people, who are eager to develop and implement e-learning and LLL in the university; • Brilliant subject matter experts; • Possibility of cooperation with peer-developers in both, national and international levels. Namely, collaboration with National e-Learning 	<ul style="list-style-type: none"> • Low motivation in academic staff used to traditional teaching methodology, • Technophobia, IT illiteracy • Insufficient capacity of existing computer lab classes; • Insufficient equipment for recording learning content (lectures, videos, etc.); • Insufficient knowledge how to develop and

<p>Network and Regional (South Caucasus) e-Learning Network;</p> <ul style="list-style-type: none"> • Experience of usage LMS systems (LMS Moodle); • Experience in the development and implementation of e-learning courses. 	<p>organize e-learning content;</p> <ul style="list-style-type: none"> • Insufficient legislature regulation; • Insufficient funding; • E-learning related quality assurance • No institutional documents dealing with e-learning, ex. vision, strategy, funding; • Pure organization of e-learning, lack of operational regulating documents.
<p>Opportunities</p>	<p>Threats</p>
<ul style="list-style-type: none"> • Learn about existing good practice of the project partners and implement it at TSU; • Create modern infrastructure with project funding; • Elaborate missing e-learning related regulations; • Establish structural unit that will be responsible for e-learning related activities at the university; • With help of project partners development of e-learning related training material; • Building of a strong capacity for e-learning; • Increase the awareness of high-level decision makers in e-learning and benefits, obtained from this approach to learning; • Development of certification of teachers and courses thus ensuring quality; • Development of blended learning and high quality e-learning material. 	<ul style="list-style-type: none"> • Rejection from those, who are used to the traditional approach to teaching and have fear to be out of the processes if technology-enhanced teaching is implemented; • Fear of new approach to learning among those, who are used to traditional, paper-based approach to learning; • Sufficient number of students and teachers who directly benefit from e-learning otherwise e-learning will not be respected as important at institutional level; • Sustainability of e-learning related activities at institutional level.

TARGET GROUP

Main target group of e-learning for TSU are bachelor, master and PhD students, as well as teaching staff. Then high school teachers and students can also be considered as target group. At some point stakeholders of international educational programs may become an important target group.

6. GEORGIAN TECHNICAL UNIVERSITY (GTU)

CURRENT STATUS

The educational system in Georgia is undergoing a process of reforms and reorganization at the moment. Implementation of modern ICT at the different levels of education is very intensive. Higher education institutions, including GTU, have already made first attempts to implement ICT in different aspects of their educational process.

At the GTU e-learning is used mainly in a blend with traditional, F2F learning. At the moment, e-learning is considered as an auxiliary tool used in order to strengthen and enrich learning results obtained during the traditional educational process. One of the reasons we are not able to pilot pure e-learning courses is the lack of a clear legislation about technology-enhanced learning.

Decision makers at the different levels, faculty staff and technical support staff are involved in the process of e-learning implementation. Decision makers support the process by taking strategic decisions about the implementation of all different kinds of technology-enhanced learning (e-learning, LLL offered using ICT, etc.) in the university's educational process.

At the moment individual faculty staff members are developing e-learning courses and different e-learning resources and using them in their own teaching, as an auxiliary means for students. This process however is not organized, structured or managed by a particular unit. Sometimes they are even not aware of each other's activities.

The duty of the technical support staff is maintenance and updating of the technical infrastructure: network, servers, etc. They are responsible for the LMS Moodle, which is used in the university nowadays. The university's centralized testing centre, as well as a number of individual professors, is using Moodle for student assessment in the first and second years of education.

It is also very important, that GTU is a member of the National e-Learning Network. The very tight cooperation between the members of the network is an additional support for the sustainable development and implementation of e-learning and LLL at all levels of the organization.

The infrastructure for e-learning at GTU is partly developed: network bandwidth is good enough to have appropriate access to e-learning courses; lab classes can be used for e-learning (only for a very limited time though); there is space available to organize an e-learning centre; mainly free open source software is available. Our main strength though is the valuable expertise of our subject matter experts. We have possibility to use extremely high knowledge of our professors in order to develop learning content of high quality.

The main challenge GTU is facing is the problem of funding. GTU has to depend mainly on internal and external grant funding.

The general literacy of staff about e-learning and LLL is quite high at the university. Several F2F trainings, seminars and webinars about technology-enhanced learning have been conducted. But additional dissemination and training initiatives are still required.

Students at GTU are very well informed about e-learning. A high number of students has already participated in different MOOCs offered by international universities. In general, students are very keen to use technology and they more than welcome any activity which will tie their educational process with ICT.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none"> • Dedicated people, who are eager to develop and implement e-learning and LLL in the university; • Brilliant subject matter experts; • Possibility of cooperation with peer-developers in both, national and international levels. Namely, collaboration with National e-Learning Network and Regional (South Caucasus) e-Learning Network; • Sufficient level of e-learning literacy of staff; • Experience of usage different e-learning tools. Namely, LMS systems (LMS 	<ul style="list-style-type: none"> • Insufficient capacity of existing computer lab classes; • Insufficient equipment for recording learning content (lectures, videos, etc.); • Fear of new approach to learning among those, who are used to traditional, paper-based approach to learning; • Insufficient legislation; • Insufficient funding; • Insufficient e-learning resources; • Lack in LLL conceptual methodology;

<p>Moodle), authoring tools (eXelearning), video/audio tools, etc.;</p> <ul style="list-style-type: none"> • Good bandwidth and internet connection; • Experience in the development and implementation of e-learning courses in the blended learning process; 	
<p>Opportunities</p>	<p>Threats</p>
<ul style="list-style-type: none"> • Building of a strong capacity for e-learning and LLL; • Availability of creating links between business and university, and taking business on board; Expand the target group, inclusion of those, who were unable to participate in the learning process due to the strict limitations of traditional education; • Increase the awareness of high-level decision makers in e-learning and benefits, obtained from this approach to learning; • Development of the National Accreditation board for e-learning; • Development of the concept of LLL wide implementation; • Development of e-Learning and LLL courses of high quality; 	<ul style="list-style-type: none"> • Dependence on funding from grant projects, insufficient regular funding; • Dependence on the technology; • Quite sufficient initial costs; • Rejection from those, who are used to the traditional approach to learning and have fear to be out of the processes if technology-enhanced learning is implemented;

TARGET GROUP

The current and possible target groups of e-learning / LLL for GTU are the students, postgraduates and some individual or collective groups ordered by stakeholders.

PROJECT TARGET GROUP

The GTU team will take into account the specific profiles of the different target groups, both collectively and in terms of the individual people who will be

interested in the developed courses. Specific description of stakeholders will be done after determination of specificity and contents of the developed e-courses.

7. ST. ANDREW THE FIRST-CALLED GEORGIAN UNIVERSITY (SANGU)

CURRENT STATUS

As SANGU is a newly established university (from 2008), e-learning has not been formally developed yet. There is no e-learning centre, no strategy or regulation regarding e-learning or lifelong learning yet.

SANGU is however applying some elements of e-learning in blend with the traditional, face-2-face learning as auxiliary tools used to strengthen and enrich the learning experience.

The learning platform Moodle, is currently ready for implementation.

The university's library contains e-learning materials. Recorded multimedia lectures of SANGU's prominent professors and teachers are available online.

The university boasts of excellent infrastructure. The modern reading hall and the classrooms are equipped with computers and high-tech facilities: modern computers and internet access (both network and Wi-Fi, which covers all buildings of university). There are computer laboratories, which can be used for e-learning after the classes, and laptops for users of the university library.

SANGU mainly depends on different internal and external grant funding. There are plans to assign technical or academic staff specifically to the development of e-learning at SANGU.

The level of e-literacy of the staff is very high at the university. But, in order to increase the awareness of the university staff about e-learning, additional activities are still needed.

Students have a positive attitude towards e-learning and will welcome any activity, which will tie their educational process with ICT. They already have in their curriculum a mandatory ICT course.

SWOT ANALYSIS

Strengths	Weaknesses
<ul style="list-style-type: none">• Brilliant subject matter experts• Sufficient level of e-literacy of staff	<ul style="list-style-type: none">• Insufficient equipment for recording learning content (lectures, videos,

<ul style="list-style-type: none"> • Have access to a tried and tested LMS • Possibility of cooperation with peer-developers in both, national and international levels • Good bandwidth and internet connection • Experience of usage different e-Learning tools. Namely, LMS Moodle, video/audio tools 	<p>etc.)</p> <ul style="list-style-type: none"> • Lack of readiness of teachers to use the distance e-technologies in their work • Insufficient skills of learners for the electronic/distance form of learning • Lack of quality e-learning training material • No experience of pure e-learning • Lack of sufficient legislature regulation in the field of e-learning and distance learning • Copyright problems • Insufficient e-learning resources • Lack in LLL conceptual methodology • Lack of specialists in the field of elaboration of e-learning courses • Lack of innovative didactics to exploit the great learning potentials of ICT and media technologies
<p>Opportunities</p>	<p>Threats</p>
<ul style="list-style-type: none"> • Develop the National Learning Management System • Building of a strong capacity for e-learning and LLL • Expand the target group, inclusion of those, who were unable to participate in the learning process due to the strict limitations of traditional education • Increase the awareness of high-level decision makers in e-Learning and benefits, obtained from this approach to learning • Development of the National Accreditation board for e-learning 	<ul style="list-style-type: none"> • Organizational change e.g. departmental restructuring, cost cuttings etc. • Technical Infrastructure issues i.e. IT equipment not fit for purpose • E-learning being seen as not cost effective • Dependence on funding from grant projects, insufficient regular funding • Dependence on the technology • The influence of speed of the internet connection on the access to the study material • Users/learners of lifelong learning

<ul style="list-style-type: none"> • Development of e-learning and LLL courses of high quality 	<p>services are expected to be at different levels of background knowledge and different levels of ICT skills</p>
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TARGET GROUP

The target group of the project results involves:

- Teachers at universities, secondary schools, trainers, lecturers, tutors and other people working in education;
- Bachelor, Master and Doctoral students of HE institutions;
- Senior pupils of the schools providing general education;
- Graduates of HE institutions, who wish to obtain additional specialization.

RELATED PROJECTS IN THE FIELD OF E- LEARNING AND LIFELONG LEARNING

Institution Capacity Building and Human Resource Development for eLearning in Caucasus

Description: This project is a joint project of GIZ (German Federal Ministry for Economic Cooperation and Development) and ArmeLNet and offers annual e-learning trainings for HEI and Vocational Education organizations.

Website: www.giz.de, www.moodle.elearning.am

GEORGIA 2020 (Degree Accreditation and Institutional Support Initiative for Science, Technology, Engineering and Mathematics)

Description: Georgia 2020 is a project funded by the Millennium Challenge Corporation and aims at the development of internationally accredited degree programs at Tbilisi State University, Georgian Technical University and Ilia State University. Graduates will get bachelor degree from San Diego State University as well as from Georgian Universities. During implementation phase of the project different e-learning tools will be heavily used, e.g. LMS, electronic databases, online course delivery.

Website: <http://georgia.sdsu.edu>

SIRUS (Shaping Inclusive and Responsive University Strategies)

Reference: 502784-LLP-1-2009-1-BE-ERASMUS-EMHE

Duration: 1 October 2009 – 30 September 2011

Coordinated by: EUA- European University Association (Belgium)

Description: The European University Association (EUA), in a consortium with the European Association of Distance Teaching Universities (EADTU), the European University Continuing Education Network (EUCEN) and the European Access Network (EAN), has launched the EU funded project SIRUS, to support Europe's universities in implementing the commitments made in the European Universities' Charter on Lifelong Learning and thus to assist them in developing their specific role as lifelong learning institutions forming a central pillar of the Europe of Knowledge.

This project has offered approximately twenty universities with different profiles and interests in LLL, and which are at different stages of LLL implementation, an

opportunity to develop and enhance their strategic LLL approaches, in interactive discussion with colleagues from all over Europe. At the same time, it has allowed them to contribute to the development of policy recommendations for the European Higher Education Area.

Website: <http://www.sirus-project.eu>

SSRULLI (Strengthening the Specific Role of Universities as LLL Institutions)

Reference: 544251-TEMPUS-1-2013-1-GE-TEMPUS-JPHES

Duration: 1 December 2013 – 30 November 2015

Coordinated by: Ivane Javakhishvili Tbilisi State University.

Description: SSRULLI aims to strengthen capacities for University Lifelong Learning in Countries of the South Caucasus. The project aims specifically at benchmarking of potentials and development of institutional recommendations for boosting the role of the partner universities as LLL institutions. The action further wants to strengthen the strategic, infrastructural and human capacities in the 9 partner universities as a model for the development and implementation of management of ULLL. At the core of the project lies the development of a regional network as a platform for regular dialogue and exchange information on ULLL challenges and opportunities in region. One of the main results of the project will be to at least develop one ULLL course in each university. The courses will be piloted during the project progress to ensure effectiveness of working of established or upgraded ULLL offices. The problems of ULLL are similar in all three South Caucasian countries and to adjust to the demands of the knowledge based economy, there are several crucial issues to be solved: development of the institutional strategic plans for the implementation of ULLL principles; development of infrastructure (establishment or upgrading of existing ULLL centres or units, capacity building, development of expertise); development of the appropriate ULLL curricula adjusted to the needs of the adults and returning students.

Within the frame of the project the regional and European partners will jointly develop the strategic plans for ULLL for each Partner University and region

avoiding the repetition of weaknesses and pitfalls experienced in their EU home systems and will take the specific Caucasian challenges into account and address the needs of each Institution. One of the results of the project will be the establishment of regional network for ULLL taking into account the rich experience of European partners in networking issues.

Website: <http://www.unimig.tsu.edu.ge> & <https://www.facebook.com/SSRULLI>

SuToMa (Development of new modules for international bachelor and master programmes in sustainable tourism management)

Reference: 530561-TEMPUS-1-2012-1-DE-TEMPUS-JPCR

Duration: 15 October 2012 – 14 October 2015

Coordinated by: Jade University of Applied Sciences (Germany)

Description: The project is designed to modernize curricula in sustainable tourism management (SuToMa) in selected higher education institutions (HEI) in Azerbaijan, Armenia and Georgia. The project focuses on the development of new study modules and teacher trainings in SuToMa, a hitherto underdeveloped field in all three countries. The new modules cover innovative topics, such as the integration of theory and praxis, intercultural communication, e-learning and IT technologies, and will be implemented in existing as well as new BSc. and MSc. study programmes, and accredited with ECTS.

The project includes a workgroup on e-learning which has as its main task to provide a unified electronic platform as learning management system for all the modules elaborated within this project. The aim is to familiarize future teaching staff with the concept of blended learning and to enable them to apply contemporary (electronic) and traditional means of teaching. The activities of this workgroup will focus on creating guidelines for successful e-learning, guidelines for implementation and use of Learning Management Systems (LMS) and the development of eLearning courses as examples.

Website: <http://www.sutoma.eu>

Institutional Partnership: Implementing state-of-the-art didactics/ methods and research tools in academic teaching

Reference: SCOPES – 137406, Swiss National Science Foundation

Duration: 1 January 2012 – 31 December 2014

Coordinated by: Zentrum für Didaktik und Neues Lernen School of Management and Law Zürcher Hochschule Winterthur (Switzerland)

Description: This project brings together partners from Armenia, Ukraine and Russia. ARMAZEG partner SEUA is involved in the project.

While having made progress, the states of the former Soviet Union still have to go through a painful transition period. The world economic crisis has aggravated a lot of the problems. One key factor for managing transition successfully is a highly skilled workforce, in particular, highly qualified graduates and (young) researchers. Based on personal experience of working in Eastern Europe; previous joint projects with some of the proposed partners, and two meetings, the project partners have identified various problems in the academic training of students and young researchers. These problems often stand in the way of students and young researchers achieving excellence. As a further consequence, young scientists often do not reap the true benefits of actively participating and being rooted in the international science community. The higher education system still has not shaken off its Soviet heritage. Some of the resulting problems are as follows: state-of-the-art teaching methods that activate students and stimulate interest in research are not known/used, state-of-the-art electronic tools for research (for retrieving high-quality scientific information, scientific collaboration, publishing etc.) are often unknown, the potential of electronic assistance in teaching (various forms of e-learning) is often unknown/not used, which is especially harmful as the percentage of part-time students at the partners' universities ranges between 30 and 50%. Consequently, the project aims at improving teaching performance at the partners' institutes in three areas: 1. Learn, use and implement state-of-the-art tools for scientific work. 2. Learn, use and implement state-of-the-art didactics and methods. 3. Learn, use and implement basic concepts/ tools in the area of e-learning and new media to be applied in the teaching of the part-time students. A bottom-up train-the-trainer

approach will be used (together with publications and various other small steps to be taken) to disseminate the project at the partner's universities and further. All material needed will be publicly accessible online in the Russian language. The approach takes into account, in certain areas, the limited resources of the partners and their students which is why most of the electronic resources that will be used are free of charge and need only minimal technical requirements (e.g. small bandwidth). The project primarily aims at improving the skills of graduates and young scientists. Consequently, it will be carried out primarily by young scientists. The young scientists should gain experience during the project and connect with other scientists in Eastern and Western Europe. The senior scientists will benefit too and provide coaching to their young scientists and, when necessary, help them to cope with problems that arise. In addition, an overlap in research interests among the applicant and the partners allows for synergies and future joint projects.

Website: <http://p3.snf.ch/project-137406>

SOMECAT (Social Media as Catalyser for Cross-national Learning)

Reference: ERA.Net.RUS (7th Framework Programme)

Duration: 1 October 2012 – 30 September 2014

Coordinated by: Zurich University of Applied Sciences – Centre for Innovative Teaching and Learning (Switzerland)

Description: Social media is a vibrant research field. The project "SOMECAT" will expand knowledge in two branches with a geographical focus on the participating countries (Russia, Turkey, Germany and Switzerland):

1. To what extent is and can social media be used for teaching, learning and research?
2. Do and how diaspora groups use social media? If so, for what purposes?

Basing on the results, these two areas of research will be combined and it will be investigated "to what extent do diaspora use social media for learning, teaching and research?" This question has not been researched yet in any systematic way. Taking into account the findings of the previous steps, we will

develop and programme a virtual market place for education resources available to diaspora.

Among the results will be:

- A toolkit: www.socialmediaforeducation.org. That toolkit is currently evaluated by experts, after which an updated version (also in Russian) will become available).
- An E-tutor certificate course that will teach instructors how to become online instructors, available under cc in English, Russian, Armenian and Ukrainian.

Website: <http://www.somecat.org>

MICVL (Establishment of Multidisciplinary Innovative Centres for the Development of Virtual Laboratories in Biology and Medicine)

Reference: 543802-TEMPUS-1-2013-1-UK-TEMPUS-JPHES

Duration: 1 December 2013 – 31 November 2016

Coordinated by: University of Westminster (UK)

Description: The MICVL project proposes to establish Multidisciplinary Innovative centres for the development of Virtual Laboratories in Biology and Medicine in each participating Eastern Neighbouring Area University - Javakishvili Tbilisi State University, David Aghmashenebeli University, Baku State University, Azerbaijan Medical University, Odessa National University, Ivan Franko National University of Lviv, in close cooperation with the EU partner universities. In addition, this collaborative project intends to provide resources in educational technology to bridge the gap between research and education through introduction of innovative technologies.

Website: <https://sites.google.com/a/my.westminster.ac.uk/emicvl>

DesIRE (Development of Embedded System Courses with Implementation of Innovative Virtual Approaches for Integration of Research, Education and Production in UA, GE, AM)

Reference: 544091-TEMPUS-1-2013-1-BE-TEMPUS-JPCR

Duration: 1 December 2013 – 30 November 2016

Coordinated by: Thomas More Mechelen (Belgium)

Description: DesIRE aims to bring all partner HEI's involved up-to-speed with modern tools and embedded platforms. Together with coming to efficient and effective implementation of the developed curricula, one of the basic ideas are working with a logical educational-pedagogical approach, widely available tools for development, easy accessible course material with different levels of entry, lifelong learning for graduated students and a thorough quality assurance scheme.

The DESIRE consortium consists from 12 partners with required expertise, educational skills and business connections. At the same time every partner has its own and clearly delineated area of responsibility, the international organizational structure ensures that decision-making and conflict resolution will be effective, workflows and exchange of information and results between partners will be smooth and fast.

The target groups are defined as follows: students, graduates, teaching /administrative staff, top management of industry enterprises, Chambers of commerce, inside and outside the consortium of proposed project, governmental organization for welfare and unemployment care.

Wider Objectives

- To change the theoretical type of learning in Ukraine, Georgia and Armenia to practice-oriented competence-based approach
- To speed up integration between HEIs and business in target countries
- To establish cooperation between EU and target countries in education and research

Specific Project Objectives

- To create practice-oriented curricula and modules in Embedded Systems Engineering

- To create remote laboratories in Embedded System in UA, GE, AM
- To form the competences necessary for the Labour Market in Embedded Systems
- Among others, project is aimed at the Establishing LMS platform in AM/GE/UA, Construction of virtual and remote laboratories and ESD laboratory and retraining in "New teaching approaches in Eng.", "RL for ESD", "ESD Engineering".

Website: <http://tempus-desire.thomasmore.be>

LEAGUE (A Network for Developing Lifelong Learning in Armenia, Georgia and Ukraine)

Reference: 543839-TEMPUS-1-2013-1-SE-TEMPUS-SMHES

Duration: 1 December 2013 – 30 November 2016

Coordinated by: Linnaeus University (Sweden)

Description: The wider objective of the LEAGUE project is to tackle the unemployment and lack of innovation due to a gap between labour market needs and skills of labour force. Changing conditions in the labour market must be matched by a continued development of the competencies of the workforce and enhance the social inclusion of people into active work life. This could mean learning new and appropriate skills within a current work field, re-education into new profession, or providing transversal skills that enables easier career shifts.

Therefore activities within this project include work with university and national policies, focusing on organization and work with LLL approaches. LLL is meant to increase the development of individuals and to influence the economic development by providing continuous training to the labour force. The project will produce a plan for an implementation framework for LLL in these countries.

For achieving this, the activities will focus on:

1. Proposition of a legal and administrative framework within which the educational institutions can act.
2. Providing a set of guidelines for the educational institutions to actually implement LLL.

3. Enhancing social inclusion, active citizenship, personal development, competitiveness and employability of Armenian, Georgian and Ukrainian citizens through quality LLL policies and programs.

Existing initiatives in the partner countries are often locally based in a single institution. Even when the government has initialized nationwide programs, the implementation still suffered from lack of experience, support, and resources at the implementing institutions. Through the planning meetings and questionnaires we have developed a clear picture of the needs within the PCs. Therefore, with this project we plan to directly focus on elevating these differences and difficulties for a cross-country LLL strategy.

Website: <http://tempusleague.eu>

ICo-oP (Industrial Cooperation and Creative Engineering Education based on Remote Engineering and Virtual Instrumentation)

Reference: 530278-TEMPUS-1-2012-1-DE-TEMPUS-JPHES

Duration: 15 October 2012 – 14 October 2015

Coordinated by: Ilmenau University of Technology (Germany)

Description: The general objective of the ICo-oP project is to empower university-enterprises partnerships in Armenia, Georgia, and Ukraine by modernizing engineering education based on remote engineering and virtual instrumentation enhanced with transversal knowledge and competences at universities; and offering contemporary methods of the vocational education and training for adults in enterprises.

Specific objectives

- Methodology for identification and monitoring of knowledge and skills needs of labour market by June 2013,
- Learning program that will incorporate transversal and electronics/alternative technologies using remote laboratories and virtual instrumentation knowledge and competences by July 2015,

- Mutually beneficial and sustainable partnerships between academia and enterprises by offering internship programs for university and up-to-date industry training programs by Sep 2015.

Summary

- ICo-op was initiated to equip engineering students in Armenia, Georgia, and Ukraine with the skills necessary for a successful career. The program will forge partnerships between universities and industry to modernize engineering education that provides direct access to top-notch facilities with remote and virtual instrumentation. The program will be based on EU best practices, partners' industry expertise, and knowledge of business demand of target countries. iCo-op aims to:

- Establish methodology for identification and monitoring of demand for knowledge and skills in industry;
- Deliver learning programs incorporating transversal and using remote laboratories/virtual instrumentation knowledge and competences;
- Build mutually beneficial, sustainable partnerships between academia and enterprises by offering internship programs and up-to-date industry training programs.

ICo-op starts with analysis of knowledge and skill gaps in engineering curricula, based on AM/GE/UA field needs. 24 engineering modules, based on remote/virtual instrumentation, will be developed and enhanced with transversal competencies.

A pilot for university/enterprise participants with integrated internship program and trainings for instructors and module developers will be established in 8 universities and at least 9 enterprises of the 3 targeted countries. Roundtables, workshops, conferences will be carried out for wider dissemination of the methodology in these countries.

Developed reports, recommendations, set of informational and instructional materials will be available online for free. Use and application of project products will commence during the project to evaluate strengths and sustainability of the methodology and to address potential

problems.

In all three countries, ICo-op will expand the methodology and resources for enhancing student competency required by modern industry. The results will effect educational and economic transformation of partner countries.

Website: <http://www.ico-op.eu>

CONCLUSION

In Armenia and Georgia there is currently a lack of a clear legislation regarding e-learning and lifelong learning. As a result of this, it is a problem to get fully online curricula accredited. Accreditation for blended curricula will be feasible. For education in the framework of lifelong learning (certificated) this will not be an issue.

In Georgia the National Board of Accreditation is currently being formed. The ongoing establishment of this new official body provides the opportunity to put the recognition and accreditation of e-learning on the agenda. In Armenia a legislative framework for higher and adult education is under development, but there is no centralized system of governance.

Another consequence of a lacking legislation and centralized organization, is that private and public organizations and institutions develop their own strategies and initiatives regarding e-learning and lifelong learning. Because there is no structural funding, the implementation of e-learning happens mainly based on individual initiatives and projects. The consequence is that this implementation remains fragmented, is non-related and runs a high risk of being terminated when project funding ends.

The high number of current e-learning projects and initiatives nevertheless indicates that the interest in the possibilities of e-learning is high, in Armenia as well as in Georgia, and the results of successful e-learning projects and initiatives can serve as a lever for further and more general implementation of e-learning. The project partners also reinforce that learners in general have a very positive attitude towards e-learning.

Both in Armenia and Georgia, there exist national e-learning networks to which most of the project partners belong (see www.moodle.elearning.am). The goals of these networks are: dissemination, teacher training, support and exchange of experience regarding e-learning. Both national e-learning networks are part of the Regional e-Learning Network (together with Azerbaijan). The Armenian network (ArmeLNet) established a “National Learning Management System”, a Moodle based platform used mainly for sharing e-learning resources. All the results belongs to Armenian and Georgian e-learning networks together

with GIZ. Contribution from these networks and from GIZ can be considered as in a consultancy, statistical data as well as in content and software forms.

The transnational network has already developed the “Caucasus e-learning quality assessment tool”⁴. This tool can serve as a starting point for the definition of standards and quality criteria for e-learning, together with the work already done by project partners in this field (GTU, ASPU, SEUA, TSU etc.).

The contribution can be expected also by DeSIRE, Ic-ooop and LEAGUE Tempus projects. All these projects have or will have different results with e-learning and lifelong learning components, for instance, virtual laboratories, lifelong learning policy etc. which can be useful for the future deliverables of the ARMAZEG project.

The ARMAZEG partners are at very different levels of experience with e-learning. For some ARMAZEG will mean a first step towards implementation, at other institutions strategic decisions regarding e-learning are already made at the managerial level. This seems to go together with the level of implementation of the e-learning platform. These differences in experiences and implementation will require flexibility in approach of the project’s implementation at the institutional level, but will also allow partners to learn from each other. All partners have already made the choice for the open source platform Moodle as their Learning Management System. This also creates possibilities for sharing of expertise and collaboration.

The necessary infrastructure is usually already partly in place and there is a lot of technical know-how among the partners. Access to high speed internet is sufficiently available to ensure a wide uptake of e-learning in Armenia and Georgia. All partners do indicate that there is a lot of need for staff training and high quality training material for staff.

⁴ This tool has copy right and belongs to GIZ, but the main part of it can be found on <http://www.ecb-check.org/>.

**REFERENCE OF RESOURCES AND
MATERIALS USED DURING THE
PREPARATION OF THIS DOCUMENT**

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12. <http://www.ecb-check.org>.
13. <http://moodle.elearning.am>.

ANNEX 1. METHODOLOGY/RESOURCES USED FOR THE RESEARCH AND ANALYSIS

1. IIAP

The findings presented in this report are based on interviews with the staff of IIAP, in connection with the use of the following materials:

- The law of the Republic of Armenia on higher and postgraduate professional education (adopted December 14, 2004),
- Materials mentioned in the reference list.

2. OIPH

The sources that were used drawing up this report are based on information of I-net. Widening the range of networking partners OIPH already has experience of partnership with the KU Leuven lecturers, all the significant universities of Armenia such as Yerevan State University, Armenian-Russian (Slavonic) University, a range of Academician scientific institutions, Young Biologists Association, Young Scientists Assistance Program, Yerevan State Linguistic University named after V. Brusov, Yerevan State University of Architecture and Construction, AM PEOPLE (Promoting Educational Organization through people) and so on. All the above referred Institutions and organizations have a practice of using e-learning.

3. ASPU

This report is based on internal university documentation and reports. Some presented information was discussed and validated during university meetings with staff and students. The main sources were the:

- University development strategic plan 2011-2015 (University webpage; <http://armspu.am>)
- Report of IT Centre-June 2014
- Faculty forums 2013-2014 (Minutes of staff meetings)
- Focus groups with students

The analysis of the situation at the university is based on the regular collecting and processing of information.

4. SEUA

This report is based on internal university documentation and reports. Some presented information was discussed and validated during university meetings with staff and students.

The report's findings are based on the

- Research of the technical infrastructure of the State Engineering University of Armenia;
- Interview of academic and administrative staff of the university, including the members of ARMAZEG project;
- Interview of the students and other relevant people, who will benefit from the results of the ARMAZEG project;
- Interview of the decision makers, who will support the process of the ARMAZEG project development at the University,
- Interview of several stakeholders, namely the specialists of Armenian E-learning Network and Tempus national office, business sphere and other educational estates, etc.

5. TSU

The report's findings are based on information collected by meeting and interviewing with the people listed below:

- Interview of the key persons in the National E-Learning Network;
- Informative meetings and interviews of the staff of the IT services and the LLL centre at TSU;
- Interview of the students and other relevant people, who will benefit from the results of the ARMAZEG project;
- Interview of the decision makers, who will support the process of the ARMAZEG project development at the university;
- Interview of the representatives industry and stakeholders.

6. GTU

The report's findings are based on the

- Research of the technical infrastructure of the Georgian Technical University;
- Interview of the staff of the university, including the key staff of the ARMAZEG project;
- Interview of the students and other relevant people, who will benefit from the results of the ARMAZEG project;
- Interview of the decision makers, who will support the process of the ARMAZEG project development at the university.

7. SANGU

The report's findings are based on the overview of the technical infrastructure of the St. Andrew the First-Called Georgian University (SANGU) on interviews of:

- Key persons of the National E-Learning Network;
- Academic staff of the university, including the key staff of the ARMAZEG project;
- Bachelor, Master and Doctoral students and other relevant people, who will benefit from the results of the ARMAZEG project;
- Decision makers, who will support implementation of the ARMAZEG project at the university.

ANNEX 2 GOOD PRACTICES OF ASPU

The university has created a comprehensive development program that addresses four key areas of readiness regarding the establishment of an e-learning centre: the institution, faculty, courses, and learners. The areas can be used to generate a checklist to help faculty evaluate which aspects of their course needs attention.

Institutional readiness

- The project is in line with the university mission.
- The project fits well with learners' needs.
- High interest of faculty.
- Leadership for initiated faculty commitment.

Faculty readiness

- A willingness to learn.
- A willingness to control teaching style.
- An ability to collaborate with peers.
- A willingness to change the traditional faculty role.
- An ability to build a support system.
- An ability to learn from partners.

Course readiness

Faculty demonstrates understanding of:

- The technology in use.
- The pedagogy required for online teaching.
- The logistic of the course design process.

Learner readiness

- An ability to take responsibility for one's own learning.
- An accessibility of the course to be taken.
- An ability to support peers.
- An ability to deal with problems during the use of technology.