Constantine the Philosopher University in Nitra
Faculty of Natural Sciences
Department of Computer Science

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University of Hradec Králové
Faculty of Science
Department of Informatics

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Abstract

This paper, prepared by an international team of authors including specialists from different scientific areas, connected with ICT, e-learning, pedagogy, and other related disciplines, focuses on the objectives of the international project IRNet - International Research Network for the study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences. The project is financed by the European Commission under the 7th Framework Programme, within the Marie Curie Actions International Research Staff Exchange Scheme. Grant Agreement No: PIRSES-GA-2013-612536; the duration of the project: 48 months1/01/2014 – 31/12/2017. In particular, the article describes a WP2: Analyses of legal, ethical, human, technical and social factors of ICT and e-learning development, and the state of intercultural competences in partner countries: Objectives, Tasks, and Deliverables. The second part of the paper includes data from preliminary research. During the study and analysis of global (international) and local (national) documents as well as university documents Table 1 was prepared which sets forth a comparison of legal, ethical, human, technical and social factors of ICT and e-learning development, and the state of intercultural competences in several partner countries, for example Poland, Ukraine, the Netherlands and Russia in the context of the IRNet project – International Research Network.

Keywords

E-learning. Legal, ethical, human, technical and social factors of ICT. IRNet - International Research Network Project.

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INTRODUCTION

On the eve of a new century, there is an unprecedented demand for and a great diversification in higher education, as well as an increased awareness of its vital importance for sociocultural and economic development, and for building the future, for which the younger generations will need to be equipped with new skills, knowledge and ideals. Higher education includes 'all types of studies, training or training for research at the post-secondary level, provided by universities or other educational establishments that are approved as institutions of higher education by the competent State authorities'. Everywhere higher education is faced with great challenges and difficulties related to financing, equity of conditions at access into and during the course of studies, improved staff development, skills-based training, enhancement and preservation of quality in teaching, research and services, relevance of programmes, employability of graduates, establishment of efficient co-operation agreements and equitable access to the benefits of international co-operation. At the same time, higher education is being challenged by new opportunities relating to technologies that are improving the ways in which knowledge can be produced, managed, disseminated, accessed and controlled. Equitable access to these technologies should be ensured at all levels of education systems (World Declaration on Higher Education).

IRNET PROJECT SUMMARY

IRNet - International Research Network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences. Project financed by the European Commission under the 7th Framework Programme, within the Marie Curie Actions International Research Staff Exchange Scheme. Grant Agreement No: PIRSES-GA-2013-612536 Duration of the project: 48 months1/01/2014 – 31/12/2017.

Nowadays, we can observe a rapid transition of the knowledge society to the "society of global competence", in which both the global economy and the education systems are undergoing changes. It is evident that without an active implementation of innovative forms and methods of education, and above all, distance learning at all levels of education these objectives cannot be successfully achieved. At the same time we should identify the existing problem - the fact that e-learning methodology is not yet fully developed and specified, both within the EU and in Ukraine. Developing and implementation of the system designed to develop IT competences of contemporary specialist, in particular the future teachers, current teacher, leadership, based on the systematic use of selected Internet technologies, such as some LCMS systems (as Moodle), Massive Open Online Courses, "virtual classroom" technology, social media, other selected Web 2.0 and Web 3.0 technology positively contributes to the development of skills in the area of IT and intercultural competences. The IRNet project aims to set up a thematic multidisciplinary joint exchange programme dedicated to research and development of new tools for advanced pedagogical science in the field of ICT instruments, distance learning and intercultural competences in the EU (Poland, the Netherlands, Spain, Portugal, Slovakia) and Third Countries (Australia, Russia, Ukraine). The programme will strengthen existing

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collaboration and establish new scientific contacts through mutual secondments of researchers. The main objectives of the project are: 1. to exchange expertise and knowledge in the field of the innovative techniques of education between EU and Third Countries and suggest effective strategies of implementing new tools in their profession; 2. to analyse and evaluate social, economic, legal conditions, as well as methodologies and e-learning techniques being developed in the European and Third Countries involved.

The IRNet project aims to set up a thematic multidisciplinary joint exchange programme dedicated to development of new tools for advanced pedagogical science in the field of ICT instruments, distance learning and intercultural competences in the EU, Australia, Ukraine and Russia. The programme will strengthen existing collaboration between EU partners, and 2 third country institutions of higher education through mutual secondments of researchers.

Nowadays, we can observe a rapid transition of the knowledge society to the "society of global competence", in which both the global economy and the education systems are undergoing changes. It is evident; that without an active implementation of innovative forms and effective methods of education, and above all, distance learning at all levels of education these objectives cannot be successfully achieved. However, we can identify an existing problem that ICT techniques and e-learning methodology are not fully developed yet either within the EU or in Australia and in Ukraine. In this situation, an implementation of the system designed to develop ICT competences of contemporary specialists, in particularly current and future teachers, based on the systematic use of selected Internet technologies, such as some LCMS systems (as Moodle), Massive Open Online Courses, "virtual classroom" technology, social media, other selected Web 2.0 and Web 3.0 technology will positively contribute to the development of skills in the area of ICT and intercultural competences, other.

More detail conception of the project described in the Project application and on the project web-site (IRNet Project Application, www.irnet.us.edu.pl)

The main objectives of the project are as follows:

1. To evaluate teaching competences and to suggest effective strategies of implementing new innovative tools in the educational activity in the context of globalization of education.
2. To explore indicators of educational effectiveness in the EU and third countries involved in the project.
3. To exchange experiences, analyse and evaluate teaching competences in usage of innovative forms of education and suggest effective strategies of implementing innovative ICT tools in the education activity.
4. To analyse and evaluate social, economic, law and ethics conditions, as well as methodologies and models of e-learning techniques being developed in the European and third countries involved into the project.
5. To evaluate the effectiveness of the existing models/methodologies designed to provide e-learning and enhance intercultural awareness.
6. To develop a new model based on the current existing *models/methodologies and literature review.*

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7. To evaluate and present new models/methodologies for an effective remote collaborative work and improve Information technologies in Education Science in EU and third countries.
8. To actively transfer knowledge with a view to generating strategic impacts in the thematic research area.
9. To promote scientific discussion about the integrity of systems of education and work focusing on competence issues in the context of globalization of higher education.
10. Staff exchange between institutions in Europe (the Czech Republic, the Netherlands, Poland, Slovakia, Spain, Portugal) and third countries (Ukraine, Russia and Australia).
11. To strengthen existing collaborative research (e-learning methodology, web 2.0, web 3.0 technology analyse, intercultural competences, teacher skills in school of the future, social, human, IT, psychological, methodical, ethical, law factors, influence on some key competences developing) (IRNet Project Application, www.irnet.us.edu.pl).

METHODS

The planned scientific activities are divided into seven interconnected work packages (http://www.irnet.us.edu.pl/documents) in order to structure the work planned, of which five are based on joint researches of all the partners, one is focusing to dissemination of results (WP7) and one WP is designed to project management (WP1). Each of Work Packages is designed to one of main research activities of the project and aims to develop a new conceptual and methodological approach in the thematic research area. These will be also a basis of long term research collaboration promoting knowledge transfer between EU and third countries. The project seeks to use the synergies and complementarities of the 10 research teams to furnish a more accurate and holistic picture of the current state of universities. Each of these Work Packages is designed to produce specific outputs: workshops to discuss the results, a website, a working paper series to put the research results quickly into the public domain, and a book covering the scientific achievements. Overall, the work packages aim to widen an established research agenda and to develop a new conceptual and methodological approach. These will be the basis of a joint research application and long term research collaboration, which will assist in promoting and reflecting upon knowledge transfer between EU and non-EU countries.

WP2: analyses of different factors of ICT and of e-learning development in partner countries

We introduce the objectives and the tasks of the second work package in this chapter.

The overall goal of the WP2 is to anticipate the coming years when universities will face the need to work together, both in terms of student exchange and in terms of technological and infrastructural procedures for exchanging staff members and open online courseware material. The recent attention for MOOCs (Massive Open Online Courses) is only a small part of the solution. Much more vital are the compatibility of

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institutional policies, benchmarks for effectiveness and the mutual recognition of assessment characteristics.

Building on the leading work of the team the participants will engage in a critical review of the existing literature, legal documents, web sources, etc., drawing on contributions from a range of relevant disciplines (education, computer science, intercultural education, sociology, anthropology, political science) and analyse legal, ethical, human, technical, social factors of development ICT, e-learning and intercultural development in partner's countries. They will add new perspectives on the problem of understanding the higher education and developing some key competences - globalization nexus in different regional and national contexts.

This WP2 will be coordinated by UT (the Netherlands), exploiting their particular expertise in some key competences and education. It will advance existing knowledge by creating a synergy between UT's expertise with US, BGKU, DSTU expertise on legal, ethical and human factors of ICT development as well as psychological accomplishment of face-to-face and e-learning and teaching and sharing the latest blending teaching methods via technology in CU (Australia) and expertise of other universities.

The most important WP2 tasks (http://www.irnet.us.edu.pl/documents/wp2, 2014) include:

- Mapping and developing an account of factors involved in process of globalisation and regionalization in developing key competences, including their interests, scales of influence, and temporal horizons.
- Examining the role of higher education policy in globalisation processes (e.g. shifts from servicing to driving development of a knowledge society and from aid to e-learning as a means of competences' building) and the role played by higher education institutions and their projects as potential models for other world regions.
- Identifying the role of key international higher education institutions in policy developing of key competences and in new forms of international cooperation.
- Analysis of processes of competences development – e.g. processes operating simultaneously on different scales, contemporary trends and previous research.
- Researchers will engage in individual/joint-research in the visited institution. If it is in a city they happen to be researching they will be able to carry out fieldwork and/or archive research.
- Analysis of legal, ethical, human, techniques, social factors of Development ICT, e-learning and intercultural development in every partner's countries.

Researchers will be expected to take part in events, such as conferences, workshops and roundtables, particularly ones that deal specifically with their topic(s) of research, for example:

- Initial seminar in Poland in remote form (using Adobe Connect technology for videoconferences).
- Meeting for all project participants in Spain.
- Videoconferences and roundtable debate.

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- Meeting and Workshop (HSPU, Russia).
- Conferences DIVAI 2014 (Distance Learning in Applied Informatics) UKF (Slovak Republic); Conference "Innovations in higher education and dissemination of the initial results of the research on the law, ethical, human, technical, social factors of ICT developments, e-learning and intercultural developments in deferent countries" (DSTU, Ukraine), others.

Comparison of different factors of ICT and e-learning in several partner countries is carried out using such methods and tools compatible with the aims and tasks of WP2, as:

1) study and analysis of documents, 2) survey, 3) interview, 4) observation, 5) development of the subject dictionary, 6) research trip and visiting a partner university, 7) meeting, (video)conference, seminar, workshop, etc.

RESULTS

During the study and analysis of global (international) and local (national) documents as well as university documents tables were prepared which sets forth a comparison of legal, ethical, human, technical and social factors of ICT and e-learning development and the state of intercultural competences in several partner countries, for example Poland, Ukraine, the Netherlands and Russia in the context of the IRNet project – international scientific network.

Recommendation to the Committee of Ministers to pay particular attention to the ethical and social aspects related to basic skills in the use of ICT. In the Recommendation (2006/962/EC of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning), the European Parliament and the Council of the European Union (http://eurlex.europa.eu/, 2006) defined eight key competences that are needed by every person for self-realisation and personal development, for being an active citizen and for achieving full social potential. The digital competence is ranked fourth. Table 1 shows the comparison of legal factors and Table 2 shows the legal factors defined in documents published at the participated universities.

Table 1: Comparison of legal factors.

Factors	Poland	Ukraine	The Netherlands	Russia
ICT and e-learning in education	Standards of education. Preparing for the teaching profession (Law on Higher Education, ACT of 27 July 2005 Article 9c.)	National Qualifications Framework (Resolution of Cabinet of Ministers of Ukraine, 11 November 2011)	The Dutch State University system is characterized by free entrance for each student who graduated from the secondary school, provided that the needed subject courses have been covered. The targeted competences are	Decree of the Ministry of Education and Science of the Russian Federation dated 03.08.2012 № 583 "On monitoring the activities of federal government educational institutions of higher education" (http://www.edu.ru/db-mon/mo/Data/d_12/m583.html)

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			both academic and professional. Still the prescribed language for the bachelor stage is Dutch; Masters- and Ph.D. curricula are saturated with English at the moment.	
Could be distance learning officially used as a legal learning and teaching form and teaching at the high school? What are the conditions?	The number of hours in remote mode does not exceed 60 % of the total number of hours of classes. (Regulation of the Minister of Science and Higher Education of 9 May 2008)	Regulation of the Minister of Science and Higher Education of 30 April 2013	The use of media in Dutch Higher Education is encouraged as far as it contributes to flexibility and internationalisation. Step by step the ministry of higher education becomes aware that MOOCs are helpful to keep diversity in programs alive as not all specialties can be afforded by the limited number of universities staff members.	Federal law "About Education" The Law officially provides the possibility to use e-learning and distance learning technologies. Organizations engaged in educational activities are able to use e-learning and distance education technologies in the implementation of educational programs.

Table 2: Comparison of legal factors at universities participated in the project.

University of Silesia in Katowice	Borys Grinchenko Kyiv University	University of Twente in Enschede	Herzen State Pedagogical University of Russia
Decree No. 66/2012 formally allows one to teach up to 60% of classes in the remote mode.	Approval of the Regulation on e-learning courses in LMS Moodle, and special requirements for e-learning courses certification, 2012	The University of Twente has adopted the potential of MOOCs in a way that stimulates the further evolution of mediated learning, both on- and off-campus. Its goal is growing quality awareness at the level of teachers and curricular designers.	Development and implementation of primary and secondary distance education programs (Development program 2012–2015)
Increase in the number of e-learning courses, and greater activity in distance teaching. Organisation of lifelong learning courses and trainings – also in the form of e-learning in	Approval of the Regulation on professional development of teachers by creation of e-learning courses as compulsory for all teachers, availability of	Quite recently the board of governors at the university of Twente has expressed the explicit interest to undertake MOOCs as format for implementing fields of excellence.	Development of electronic educational resources aimed at remote support for various categories of students (pupils, students, students, professors, teachers,

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Polish and English – in the use of electronic databases for students, doctoral candidates and employees. Using and developing modern computer and information technologies for more individualised education in the form of e-learning and blended learning (Development Strategy 2012-2020).	an electronic course as necessary condition for receiving the title of associate professor and professor. Increase in the number of e-learning courses Using and developing information technologies for more individualised education in the form of e-learning and blended learning (Development Strategy 2013-2018). Decree on the Experiment of using mixed type of education in teaching masters programmes, 2013 Decree on the mandatory use of ELC in teaching correspondence department students, 2014	One of the challenges is to integrate social (pseudo) presence, constructivism, problem-based learning and social media. Prior to these mechanisms, there is a need to allow students to prove competence through unique, authentic learning achievements like design and societal problem solving, rather than just checking if the curricular components are mastered.	people with disabilities), including in foreign languages. Teachers' training in implementation of remote support for students with the use of electronic educational resources (Development program 2012–2015)

Recommendation to the Committee of Ministers places emphasis on paying particular attention to the ethical and social aspects related to basic skills in the use of ICT (Resolution, session Athens, Greece, 10-12 November 2003). Table 3 shows the comparison of ethical and social factors.

Table 3: Comparison of ethical and social factors.

University of Silesia in Katowice	Borys Grinchenko Kyiv University	University of Twente in Enschede	Herzen State Pedagogical University of Russia
Maintaining high ethical standards in research and compliance with the best practices code (Development Strategy 2012-2020). Implementation of a zero tolerance policy on plagiarism and other unethical behaviours (Development Strategy 2012-2020).	Adoption of corporate standards for teachers and students on ICT (Development Strategy 2013-2018). Implementation the project "corporate culture of the University," 2013, holding regular training sessions with teachers, students and staff on the question of Corporate Culture	Ethics and Technology has been formulated in curricula and project evaluation. Typical questions that emerged are: How can we see to it that newly emerging and converging technologies and infrastructures express our considered moral judgments and widely endorsed public values? How can we assess our technology in the light of public moral	Section 4.2. Social Effects. The program will make a significant contribution to the development of innovative educational system of the Russian Federation (Development program 2012 – 2015)

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		values like sustainability, user autonomy, safety, privacy, accountability, democracy and quality of life? What role should public actors play in decision making about technological risks in design? And how are our norms and values affected themselves by technological developments?	

Maintenance of its work program, as the main priority, learning foreign languages, in order to ensure that all people involved in educational systems will be able to effectively communicate in foreign languages and fully benefit from the increasing wealth of information and opportunities for contacts and exchange, to promote the training of teachers and teacher trainers in the use of information and communication technologies (ICT) for educational purposes (Resolution, session Athens, Greece, 10-12 November 2003). Table 4 shows the comparison of human and educational factors.

Table 4: Comparison of human and educational factors.

University of Silesia in Katowice	Borys Grinchenko Kyiv University	University of Twente in Enschede	Herzen State Pedagogical University of Russia
Individualised education in the form of e-learning and blended learning (Development Strategy 2012-2020).	Individualised education in the form of e-learning and blended learning (Development Strategy 2013-2018).	Internationalization and the Integration of International Students at the University of Twente has been researched by Silke Kucking in her Master Thesis.	Development of electronic educational resources aimed at remote support for various categories of students (pupils, students, students, professors, teachers, people with disabilities), including in foreign languages (Development program 2012 – 2015)

The Digital Agenda for Europe 2013-2014 (https://ec.europa.eu/digital-agenda/en/news/digital-do-list-new-digital-priorities-2013-2014) analyses and describes in particular 5) Entrepreneurship and digital jobs and skills, and in this documents it is stressed that "The Commission signals that by 2015 700,000 to 1 million ICT jobs will not be filled in Europe, due to lack of skilled personnel. Additional action is needed to boost the overall number and the employability and mobility of ICT experts. Therefore the Commission will launch a 'Grand Coalition on Digital Skills and Jobs'. Table 5 shows the comparison of technical factors.

Table 5: Comparison of technical factors.

University of Silesia in Katowice	Borys Grinchenko Kyiv University	University of Twente in Enschede	Herzen State Pedagogical University of Russia
Using and developing	Using and developing	The Uses and	Monitoring of federal

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modern computer and information technologies for more individualised education in the form of e-learning and blended learning; (Development Strategy 2012-2020). Making the University of Silesia's infrastructure available for events important for the Region and Country (Development Strategy 2012-2020).	modern computer and information technologies for more individualised education in the form of e-learning and blended learning; (Development Strategy 2013-2018).	Gratification Theory has led many initiatives on Media in the Learning and Teaching to the optimum of evolution rather than revolution. Media can be seen as catalytic rather than disruptive.	institutions of higher education is carried out to measure a number of indicators, in particular § 5.2. "The availability of information and communication education": number of PCs within the local networks with the Internet access, the channel capacity, the availability of special software".

To support the development of research on the educational use of information and communication technologies (ICT) in all subjects included in the curriculum (Resolution, session Athens, Greece, 10-12 November 2003), other. Table 6 shows the scientific aspects of factors.

Table 6: Scientific aspects of factors.

University of Silesia in Katowice	Borys Grinchenko Kyiv University	University of Twente in Enschede	Herzen State Pedagogical University of Russia
Cooperation under international research and educational projects and scientific networks (Development Strategy 2012-2020).	Cooperation under international research and educational projects and scientific networks (Development Strategy 2013-2018).	The University of Twente has embedded its internationalisation policies in a multitude of consortia and student associations.	The informatization Council of Herzen State Pedagogical University of Russia is a joint advisory and scientific advisory body of the University, developing recommendations and suggestions for solving problems of informatization in accordance with the program of development of the university, and for improving the functioning and development of innovative University through the use of modern computer technology. (Temporal Regulations)

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DISCUSSION

The authors of this paper have extensive research experience as well as a track record of previous publications within the framework of the subject of the described research (Kommers et al. (2014) Smyrnova-Trybulska (2007, 2010, 2013), Morze (2013a, 2013b, 2013c, 2013d), Noskova (2013), Pavlova (2012), Yakovleva (2013)). The global, regional and local aspects of the situation concerning the evolution and development of the educational policy in European and third countries are changing simultaneously. We can observe a reduction in differences in education systems in European and third countries thanks to such programme and projects as Bologna process, 7 Framework Programme, Erasmus etc. However, differences still remain and one of the aims of our research consortium is to explore indicators of educational effectiveness in the EU and third countries involved in the project and factors influencing this. In the previous chapter 'Results' we have presented the first outcomes of wp2 research carried out within the framework of the IRNet project – International Research Network - study and analyses of documents. Below we present one of the surveys, intended to be conducted in the coming months in all the partner universities. Received outcomes could help us to understand the current situation concerning educational policy and effectiveness in the consortium countries; these will be compared with earlier research outcomes and will support the development of more adequate research directions and project methodology.

One of the surveys, intended for university authorities and academic teachers, reads as follows:

1) What do you think of the official national educational policy, pursued by the Ministry of Education and Ministry of Science and Higher Education concerning using ICT and e-learning in higher education?

Excellent ☐ Very good ☐ Good ☐ Satisfactory ☐ Poor ☐ Other

2) Which factors most influence and characterize the educational policy, pursued by the Ministry of Education and Ministry of Science and Higher Education concerning using ICT and e-learning in higher education (in scale 1-5, 1-min, 5-max)?

Legal (in scale 1-5) ☐ Ethical (in scale 1-5) ☐ Human (in scale 1-5) ☐ Technical (in scale 1-5) ☐ Social (in scale 1-5) ☐ Other

3) Which factors most influence and characterize the educational policy, pursued by the Ministry of Education and Ministry of Science and Higher Education concerning developing multi- and intercultural competences (in scale 1-5, 1-min, 5-max)?

Legal (in scale 1-5) ☐ Ethical (in scale 1-5) ☐ Human (in scale 1-5) ☐ Technical (in scale 1-5) ☐ Social (in scale 1-5) ☐ Other

4) Do you think that globalization of information and educational environment and standardization of formal educational systems is a positive trend in the world higher education system?

☐ Yes ☐ No

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5) Do you think that globalization of information and educational environment and standardization of formal educational systems is a positive trend in your national higher education system?

Yes No

6) Should the government policy provide a system of training in ICT and e-learning for teachers?

- Certainly should
- it is the task of the educational institution
- teachers must improve their skills themselves
- other
- Should a policy in the field of e-learning resources be pursued at the state level?
- Certainly should
- it is the task of the educational institutions association
- it is the task of the educational institution itself
- other

8) Should the risks of the global information environment influencing the consciousness of the growing person (child, adolescent) be considered at the state level?

- Certainly should
- Should not, because it limits the Internet freedom
- Other

9) To what extent does the law regulate the use of e-learning in higher education?

- There are state regulations
- There are institutional regulations
- There are no precise regulations
- Other
- Do the teacher activity regulations involve the need of professional activities not only in the official language?
- Teaching is carried out only in the state language
- Teachers should use the English language in the professional activities
- Other

CONCLUSION

In this paper the authors presented the objectives of the international project **IRNet - International Research Network for study and development of new tools and methods for advanced pedagogical science in the field of ICT instruments, e-learning and intercultural competences as well as** WP 2: Analyses of legal, ethical, human, technical and social factors of ICT and e-learning development and the state of intercultural competences in partner countries: Objectives, Tasks, Deliverables. The second part of the

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paper includes data from preliminary research. During the study and analysis of global (international) and local (national) documents as well as university documents Table 2 was prepared which sets forth a Comparison of legal, ethical, human, technical and social factors of ICT and e-learning development and the state of intercultural competences in several partner countries, for example Poland, Ukraine, the Netherlands and Russia in the context of the IRNet project – International Research Network.

The international team of researchers from The University of Silesia in Katowice (US, Poland, Beneficiary 1 (Coordinator)), University of Twente (UT, The Netherlands (Beneficiary 2)), University of Extremadura (UEx, Spain (Beneficiary 3)), Constantine the Philosopher University in Nitra (UKF, Slovak Republic, Beneficiary 4), Lisbon Lusíada University (LU, Portugal, Beneficiary 5), University of Ostrava (OU, Czech Republic, Beneficiary 6), Curtin University in Perth (CU, Australia, Partner 1), Borys Grinchenko Kyiv University (BGKU, Ukraine, Partner2), Dniprodzerzhinsk State Technical University (DSTU, Ukraine, Partner 3), Herzen State Pedagogical University of Russia, St. Petersburg (HSPU, Russian Federation, Partner 4) will be continuing the study and research in the framework of the Project Application, according to the project scheduler, and in near future, they will publish subsequent papers and manuscripts in the conference proceeding as well as well in the scientific journal and monograph.

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