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**Title:** Report on the Implementation of Work Package 6 “Implementation of Methodology” in the Framework of the IRNet Project

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**Citation style:** Smyrnova-Trybulska Eugenia, Malach Josef, Kostolányová Kateřina, Morze Nataliia, Kommers Piet, Noskova Tatiana i in. (2017). Report on the Implementation of Work Package 6 “Implementation of Methodology” in the Framework of the IRNet Project. “International Journal of Research in E-learning” (Vol. 3, iss. 2 (2017), pp. 93–119)



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## **Report on the Implementation of Work Package 6 “Implementation of Methodology” in the Framework of the IRNet Project**

### **Abstract**

This article, prepared by an international team of researchers from different scientific areas connected with ICT, e-learning, pedagogy, and other related disciplines, focuses on the objectives and some results of the international project IRNet ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl)). In particular, the article describes research tools, methods, and a procedure of the Work Package 6 “Implementation of Methodology,” that is, objectives, tasks, deliverables, publications, and implementation of research trips in the context of the next stages and Work Packages of IRNet project – International Research Network.

**Key words:** International Research Network IRNet, methodology, ICT, e-learning, intercultural competences

## Introduction

The objectives of the Work Package 6 “Implementation of Methodology” are: development and implementation of a justification for the computer-oriented, theoretical, and methodological scientific system of preparation of a contemporary specialist, in particular future and in-service teachers in the ICT area, e-learning, and intercultural competences at the pedagogical faculties of universities.

The following output has been partly produced:

- basic assumptions of the concept of developing IT competences of future and in-service teachers, leader staff in the use of information and communication technologies, e-learning and intercultural competences in their professional activities have been developed, theoretically justified, and experimentally verified; and
- a basis of a computer-oriented methodological system for forming teachers’ IT competencies is to be defined and tested.

IT competencies include:

1. psychological and pedagogical fundamentals for teaching students;
2. an organisational-methodological basis of teaching;
3. implementation (by the educational system) of the social contract for preparing students – future teachers;
4. providing IT resources for the learning process;
5. information, methodological, and technical support of the educational and cognitive activity of in-service and future teachers with extensive use of remote forms of learning, based on Internet technologies;
6. adequate components of IT competences including those for e-learning; and
7. summary analysis of social media and their important role for extending research network and for the dissemination of the project outcomes.

## Description of Activities and Work

### Tasks

#### Task 6.1.

The following points have been partly improved:

- components to build a model of educational disciplines, in particular the content of theoretical material for learning programming in pedagogic and ICT disciplines of higher education institutions;
- approach to the development of ICT competences of future teachers, including e-learning;

- a theoretical model of information system development competence of future teachers;
- the concept of departmental (regional) environmental information and education, and information in a methodical system of a distance education platform;

The next development will receive: the location of regularly updated content, methods, and organisational forms of the preparation of in-service and future teachers in conditions of knowledge society and change of the education paradigm.

The main result will be an elaboration of a justification for the computer-oriented theoretical and methodological system of preparation of contemporary future and in-service specialists, in particular teachers, in the area of ICT, e-learning, and intercultural competences at the pedagogical faculties of universities.

The existing standards of teachers’ professional competences, comprised in the arrangement of key competencies – moral, praxeological, communicative, cooperative, creative, and computer ones – seem to be insufficient in educational undertakings conducted in culturally differentiated environments. Currently, these standards should be enriched with intercultural competencies which involve:

- personal competencies (cognitive, emotional, motivational, self-creative) expressed by experience and engagement in one’s own and others’ professional development based on the awareness of diversity, which means the knowledge of own and other cultures and of the significance of cultural determinants for educational processes;
- competencies in intercultural communication – enhancing the negotiating attitude, aiming at broadening subjectivity of others, comprising mostly socio-cultural and interactive abilities which are manifested in linguistic and non-linguistic skills in social behavior and evaluative behaviours in six identity fields;
- competencies in tolerant behaviours, manifested in some specific abilities to apply attitudes of tolerance in multicultural surroundings – attitudes which take into account permanent components (values, working knowledge, evaluation, and behaviours) specifying the actual attitude to a phenomenon; and
- competencies in transgression and emancipation behaviours, related to: the abilities to interact with the surrounding conditions, including multicultural surroundings; the abilities to free oneself from prejudices and stereotypes by consciously transforming oneself and others in mutual cultural learning; enduring the consequences of one’s own activity which frequently goes beyond traditionally accepted norms and values of the community and which transforms a particular (multi)cultural reality.

Some results were published in articles and books:

1. Ogrodzka-Mazur, E., Grabowska, B., Szafrńska-Gajdzica, A., & Kwadrans, Ł. (2016). Education of children and youth in culturally diverse environments: Experiences – problems – prospects. Munich: LINCOM Academic Publishers.

2. Kwadrans, Ł. (2016). A culturally different learner or a learner with special educational needs? In E. Ogrodzka-Mazur, B. Grabowska, A. Szafrńska-Gajdzica, & Ł. Kwadrans, *Education of children and youth in culturally diverse environments. Experience – problems – prospects* (124–152). Munich: Lincom Academic Publishers.
3. Grabowska, B. & Kwadrans, Ł. (2016). Multicultural and intercultural concepts in education. *Педагогічна освіта: Теорія і практика. Психологія. Педагогіка*, 26, 4–12. Retrieved from <http://pedosvita.kubg.edu.ua/index.php/journal#.UoCjjeXfKUY>.

**Task 6.2.** Summary analysis of social media and their important role for extending the research network and for the dissemination of the project outcomes – in progress.

Some results were published in articles and books:

1. Noskova, T., Pavlova, T., & Yakovleva, O. (2016). Social media for shaping professional experience of master degree students. In E. Smyrnova-Trybulska (Ed.), *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8 (pp. 91–102). Katowice–Cieszyn: Studio Noa for University of Silesia.
2. Yakovleva, O. V. (2016). Teaching in the XXI century: A practical experience of organizing students’ thematic discussion via social media. In *New Educational Strategies in Modern Information Space. E-learning Methodology Proceedings (Scientific papers)* (pp. 73–78). Saint-Petersburg: HSPU..

**Task 6.3.** The participants’ dissemination of some of their previous research work in the visited institution by giving lectures, seminars, or other activities, for example ICTE–2016, OU (the Czech Republic).

The participants disseminated some of their previous research work in the visited institution by giving lectures, seminars, or other activities during research trips to US, Poland (IRNet researchers from Ukraine and Russia) and to CU, Australia (IRNet researchers from Poland, Spain, the Czech Republic, and Slovakia). The project’s reports (including this one) are also available at: the project web-site [www.irnet.us.edu.pl](http://www.irnet.us.edu.pl), FB profile: <https://www.facebook.com/IRNet-1669593856645370/>, and Twitter profile: [https://twitter.com/irnet\\_project](https://twitter.com/irnet_project)

**Task 6.5.** Meeting in CU, Australia.

On 15 November 2016, a meeting and scientific seminar on the IRNet Project Implementation of WP5 results and conception of methodology WP6 IRNet project was held. Issues discussed were progressing the preparation of the MOOC “ICT tools in e-learning” (<http://el.us.edu.pl/weinoe>), and a new MA course degree in context of the future projects. Participants were IRNet researchers: prof. Eugenia Smyrnova-Trybulska (University of Silesia in Katowice, Poland), prof. Ewa Ogrodzka-Mazur (University of Silesia in Katowice, Poland), prof. Anna Gajdzica (University of Silesia in Katowice, Poland), dr Milan Chmura (Ostrava University, the Czech Republic), prof. Enrique Iglesias (University of Extremadura, Spain),

dr Tomayess Issa (Curtin University, Australia), dr Martin Drlík, dr Martin Cápaj, dr Peter Švec, dr Júlia Tomanová (Constantine the Philosopher University in Nitra (UKF), Slovakia).

**Task 6.6.** Meeting and workshop “Formation 21 century skills of future teachers through the use of ICT” (UEx, Spain).

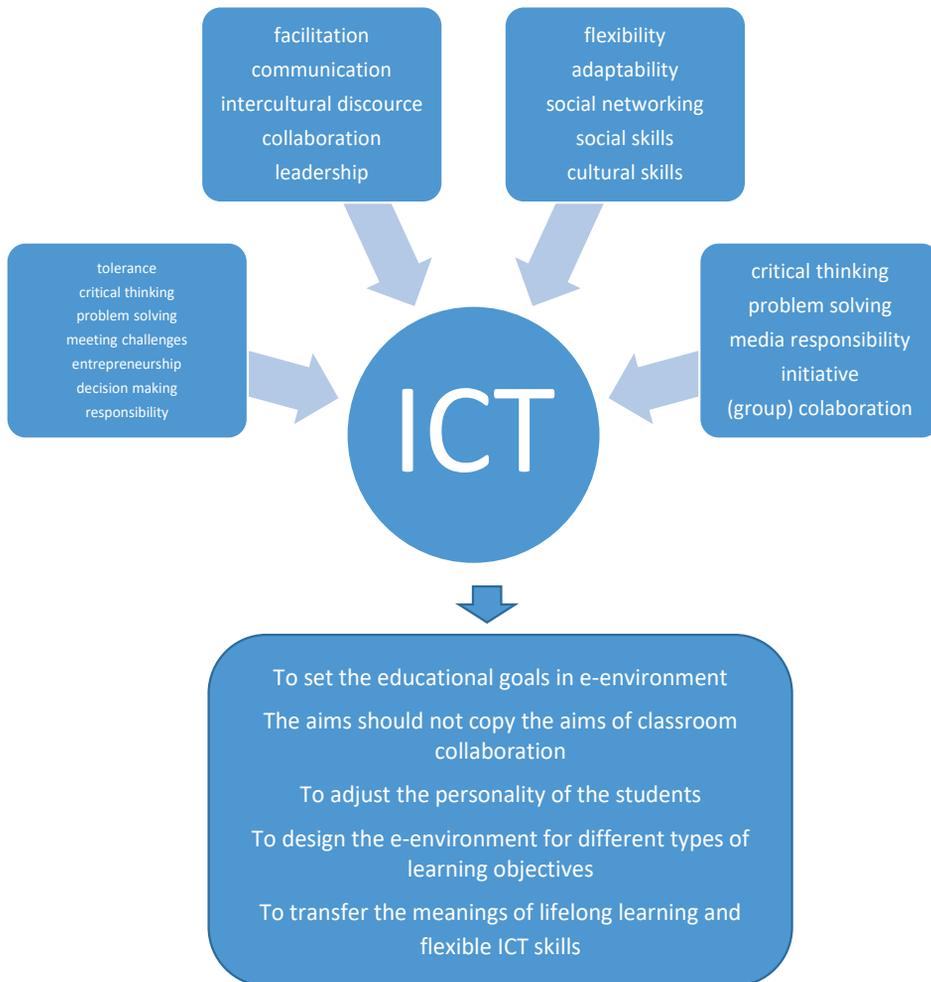
The meeting and workshop were held in March 2017 during a research trip of researchers from Ukraine, Russia, and Poland to UEx, Spain. Coordinators of the workshop were: Laura Alonso, Juan Arias, Sixto Cubo, Gemma Delicado, Prudencia Gutiérrez, Rafael Martín, Rocío Yuste (University of Extremadura). Participants were: Laura Alonso, Juan Arias, Prudencia Gutiérrez, Olga Yakovleva, Tetiana Liakh, Rusudan Makhachashvili, Nataliia Morze, Tatiana Noskova, Tatiana Pavlova, Maryna Romaniukha, Liudmyla Sorokina, Irina Vorotnykova, (University of Extremadura, Herzen State Pedagogical University of Russia, Dniprodzerzhinsk State Technical University, Borys Grinchenko Kyiv University).

The workshop “21st century skills for future teachers through the use of ICT” achieved the following objectives:

- to debate and reflect on 21st century skills of future teachers through the use of ICT; and
- to define the training of 21st century skills of future teachers through the use of ICT.

The workshop was developed face-to-face and online through Adobe Connect. Five different topics were discussed, and the following conclusions were achieved:

1. Background theories that support training of 21st century skills of future teachers through the use of ICT – there are different background theories in education (constructivism, cognitivism, connectivism, conductivism, humanism, social criticism, sociocultural theory, ...), and most of them should be combined in order to be applied to the training of 21st century skills of future teachers through the use of ICT. For e-learning, connectivism is acquiring the biggest impact, although other theories such as sociocultural theory and critical social theory should be worked on deeply. During face-to-face classrooms, constructivism acquires a higher relevancy.
2. Definition of skills of future teachers through the use of ICT – using the blackboard of Adobe Connect, the participants elaborated a figure that represents most of potential teachers’ key skills:



*Figure 1.* Teachers' key skills.

Source: Own work.

3. Intercultural skills in the 21st century – intercultural skills are necessary in a global world. IRNet project is a great example of using intercultural and ICT skills, although there are other important examples, such as e-tweening projects. To develop efficient collaboration between countries, it is important to be able to communicate in different languages. Intercultural skills should be one of the first skills to be taught in life.
4. Initial & continuous training models that support formation of 21st century skills of future teachers through the use of ICT – each country and university has its own way to develop the training of pre-service and in-service teachers, and educational policies are a very important part of it. Although degree

programmes, master programmes, and PhD studies represent a common way of learning ICT skills for teachers, teaching practice and real experiences are a key point. However, more and more, the wall between formal and informal learning is disappearing, and Personal Learning Environments are part of real interchange of knowledge.

5. The future of the training of 21st century skills of teachers through the use of ICT – the future should answer the demands of global society, which changes considerably. However, more important skills for the future are flexibility and adaptability, for with this achievement future teachers should be critical thinkers, as this is the real difference between humans and technology.

**Task 6.7.** Workshop “Selection IT tools and their using for developing IT competences.”

The workshop was conducted on 13 September 2017 at the HSPU, Russia. See [https://www.herzen.spb.ru/news/14-09-2017\\_2/](https://www.herzen.spb.ru/news/14-09-2017_2/).

### Deliverables

During the first part of implementation of WP6, the aims, the national and international documents, experience, and achievements were studied, for example:

- Organisation of the Australian professional standards for teachers
  - professional knowledge
  - professional practice
  - professional engagement (“Australian professional standards for teachers...,” 2011)
- ICT Competency Framework for Teachers (“UNESCO ICT competency framework for teachers...,” 2011)
  - “UNESCO’s framework emphasizes that it is not enough for teachers to have ICT competencies to be able to teach them to their students. Teachers need to be able to help students become collaborative, problem solving creative learners through using ICT so they will be effective global citizens. The Framework therefore addresses all aspects of a Teacher’s work.” (“UNESCO ICT competency framework for teachers...,” 2011, p. 3)
- European Digital Competence Framework for Teachers (DigCompTeach)
  - The teaching professions face rapidly changing demands, which require a new broader and more sophisticated set of competences than before. In the area of teachers’ digital competence, there are several national (e.g. Norway, Slovenia) and international (e.g. UNESCO, ISTE) competence frameworks, each with their own underlying logic, specificity and level of development (Riina & Brečko, 2014, p. 1822). A digital competence framework for teachers at European level could reinforce national and/or regional initiatives by providing a common understanding of the digital competence needs for teachers at all levels. The objective of DigCompTeach is to identify and describe the key components of teachers’ digital competence and to provide

an instrument for (self-)assessment, based on research and stakeholders' consultations.

The WP6 research of the IRNet project was based on desk research to review existing national and international frameworks for educators' digital competences and to map these onto the generic DIGCOMP framework. The reference model thus generated will be complemented by proficiency levels, indicating for each competence the learning objectives associated with basic, intermediate, advanced and expert digital competence. As a final product, a self-assessment tool, which allows educators to assess their own level of digital competence, was developed.

Some selected used documents were:

- DigComOrg - a European Framework for Digitally Competent Educational Organisations (<https://ec.europa.eu/jrc/en/digcomporg>, [http://ec.europa.eu/education/policy/strategic-framework/expert-groups/2014-2015/digital-competences/index\\_en.html](http://ec.europa.eu/education/policy/strategic-framework/expert-groups/2014-2015/digital-competences/index_en.html)),
- ECDL Module ICT in Education (version 1.0),
- Promoting Effective Digital-age Learning (for school management courses),
- ICT coordinators (Rodríguez-Miranda, Pozuelos-Estrada, & León-Jariego, 2014).

The structure of syllabus has been elaborated:

1. subject,
2. ECTS credits,
3. goals/aims/learning outcomes,
4. curriculum,
5. teaching /learning strategies (teachers' approaches to study, teaching/learning methods, organisational forms, principles, LMS, etc.),
6. tasks for students,
7. assessment, and
8. resources.

The road map of WP6 (33-40: 8 months) is as follows:

1. September 2016 – analysis of existing syllabi, publication of the ICTE2016 Conference proceedings;
2. October – analysis of of all background documents;
3. November – draft of all versions of syllabi;
4. December – expert piloting of syllabi, publication of the monograph E-learning Methodology – Implementation and evaluation with some results of IRNet research;
5. January 2017 – expert piloting of syllabi;
6. February – final version al all syllabi;
7. March – assembly of all syllabi for publication of results (articles, study);
8. April – publication of the monograph Teacher's training for digital teaching/ learning in multicultural environment (eds. UO).

WP6 syllabi, elaborated by all partners with the chosen coordinating leader (existing syllabi at IRNet team universities), are:

- MA course „E-learning in intercultural environment“ Curriculum (US) (later updated as “E-learning in cultural diversity”);
- IRNet syllabus for graduates (teachers of all subjects at primary and secondary schools) (HSPU);
- IRNet syllabus for graduates (teachers of informatics/ICT) (UKF);
- IRNet syllabus for proficiency (ICT coordinators at schools) (OU);
- IRNet syllabus for university staff (BGKU); and
- IRNet syllabus for school leaders (CU).

The innovative European MA course degree “E-learning in cultural diversity” has been elaborated. The purpose of study is to prepare the graduate for work in various educational institutions (schools, education offices, teacher excellence centres), public and non-public universities, state or private companies rendering educational and consulting services, in various business sectors as well as in companies dealing with development of distance courses. The graduate of the field of study “E-learning in cultural diversity,” having achieved the assumed learning outcomes, is equipped with reliable in-depth interdisciplinary knowledge and skills in the fields of pedagogy, IT, and e-learning management modules, and has social competencies in the field of self-improvement and proper social attitudes.

- In the field of knowledge, the graduate knows and understands – to advanced extent – facts, theories, and methods: connected with the designing of electronic courses and multimedia didactic materials as well as complex dependencies between them, relating to application of technological solutions in distance education, and applied in cooperation with providers and clients of distance education services. The graduate knows the main areas in the field of management psychology.
- In the field of skills, the graduate: can solve complex and untypical problems connected with design, organisation, and realisation of distance education; develops and masters the methods and tools of work, single-handedly and in the team; uses their native language, spoken and written, allowing for participation in a discussion on the topics connected with the distance education; can use a foreign language to the extent allowing for using the basic literature in the field of the methodology of the distance education, and can communicate with providers and clients of the electronic courses in speaking and in writing.
- In the field of social competencies, the graduate: creates and popularises the models of proper conduct, including reliability and honesty in the performed work, can perform the entrusted tasks single-handedly as well as cooperate with other team members in the field of the developed multimedia materials, can assess the work of others and provide constructive feedback, can accept responsibility for the effects of their actions, communicates with providers and clients of distance education services independently, can make decisions on

important methodological issues of distance education, and is able to ensure high quality of the rendered distance education services. They are aware of the psychological mechanisms in the field of human resources management and are aware of the necessity to develop an effective form of action in the relation between the superior and the employee as well as between the employee and another employee.

The following deliverables were achieved for the WP6.

**D 6.1. Month 37** – a report on the implementation of methodology, published on the project web-site (fulfilled).

**D 6.2. Month 33** – 5 articles published in the ICTE–2016 Conference proceeding (fulfilled).

3 IRNet papers were included in: Kostolányova, K. (Ed.). (2016). Proceedings from Information and Communication Technology in Education (ICTE-2016), 17th Annual Conference. Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictedokumenty/2016/proceedingsICTE2016.pdf>.

1. Gybas, V., Kostolányová, K., & Klubal, L. (2016). Mobile technologies in the hands of special pedagogues – Yes or no? In K. Kostolányova (Ed.), Proceedings from Information and Communication Technology in Education (ICTE-2016), 17th Annual Conference (pp. 40–48). Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictedokumenty/2016/proceedingsICTE2016.pdf>.
2. Nagyová, I. (2016). Constructivism in teaching of basic computer skills. In K. Kostolányova (Ed.), Proceedings from Information and Communication Technology in Education (ICTE-2016), 17th Annual Conference (pp. 124–132). Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictedokumenty/2016/proceedingsICTE2016.pdf>.
3. Morze, N., Makhachashwili, R., & Smyrnova-Trybulska, E. (2016). Research in education: Survey study. ? In K. Kostolányova (Ed.), Proceedings from Information and Communication Technology in Education (ICTE-2016), 17th Annual Conference (pp. 114–123). Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictedokumenty/2016/proceedingsICTE2016.pdf>.

2 papers were published in ICTE Journal:

1. Malach, J., Kostolányová, K., Chmura, M., Ogrodzka-Mazur, E., & Szafránska-Gajdzica, A. (2016). Social media at Czech and Polish universities: a comparative study. *International Journal of Information and Communication Technologies in Education*, 5(1), 41–58. Retrieved from [https://periodicals.osu.eu/ictjournal/9\\_29\\_volume5-issue1.html](https://periodicals.osu.eu/ictjournal/9_29_volume5-issue1.html).
2. Shelomovska, O., Sorokina, L., & Romanyukha, M. (2016). Advantages and barriers to the introduction of e-learning environment into academic teachers' activities in Ukrainian universities. *International Journal of Information and*

Communication Technologies in Education, 5(3), 21–33. Retrieved from <https://periodicals.osu.edu/ictjournal/index.php?kategorie=8>.

**D 6.3. Month 38** – discussion papers published in the Scientific International Journal IJCEELL

Morze, N., Smyrnova-Trybulska, E., Kommers, P. A. M., Zuziak, W., & Gladun, M. (2017). Robotics in primary school in the opinion of prospective and in-service teachers. A comparison study. *International Journal of Continuing Engineering Education and Life-long Learning*, 27(4), 318–338.

**D 6.4. Month 36** – a monograph E-learning Methodology – Implementation and evaluation is published.

Smyrnova-Trybulska, E. (Ed.). (2016). *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8. Katowice-Cieszyn: Studio Noa for University of Silesia. The book includes 10 IRNet papers.

**D 6.5. Month 39** – a scientific article “Selection IT tools and their using for developing IT competences” published in the Scientific International Journal IJWBC (in progress). The coordinator is prof. Josef Malach and the Ostrava University team.

### **Milestones (Month 32)**

The milestones foreseen for the period were attained. The decision was made, after previous evaluation, on the implementation of the developed pilot methodology. Reports were published on the Project website ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl)), in the conference proceedings, and in the scientific magazine approved by peer review. In addition the reportages about project activities and events were published on the social portals: <https://www.facebook.com/IRNet-1669593856645370/> and [https://twitter.com/irnet\\_project](https://twitter.com/irnet_project).

**D 3.3.** Monograph Education of children and youth in culturally diverse environments is published. Ogrodzka-Mazur, E., Grabowska, B., Szafrńska-Gajdzica, A., & Kwadrans, Ł. (2016). *Education of children and youth in culturally diverse environments: Experiences –problems – prospects*. Munich: LINCOM Academic Publishers.

### **Secondments and Research Trips, WP6**

#### **Secondment of BGKU, HSPU, DSTU to US (October–November 2016)**

During the secondment period, researchers from BGKU, HSPU, and DSTU continued working on the module “Formative assessment” for the collaborate e-course. The module contains several topics: topic 1 – What is FA?; topic 2 – formative assessment activities; topic 3 – how to select proper ICT tools for FA?

We prepared scripts for videos for each topic, presentations, and tests (including final tests). The course content included all ideas, developed within WP4 and WP5. During the secondment period, materials were prepared for uploading into the LMS Moodle that supports the IRNet collaborate course. In addition, materials for

videos were very accurately prepared, concerning timing, multimedia, language, and vocabulary. All the work was discussed during the meeting and workshops held during the secondment period.

The summary analysis of social media was carried out in several aspects. Most of the ideas were presented in the report for the DLCC conference, "Social media for shaping professional experience of master degree students." Particularly, the social media audience is based on self-organisation, and participants begin to interact with each other in the discussion of media messages and create new messages in this regard as a result of a network of cooperation. Message content producers enter into a relationship with the consumers of these messages and involve them in further content production. The current objective for teachers and prospective teachers is to design such education practices that evolve in a network environment with the interactions unfolding in electronic formats.

In addition, the issues of social media use were discussed during the seminar and workshop in Warsaw University of Technology (27 October 2016) "European educational programmes." The HSPU team presented the report "Informatization of teachers' professional activities and new educational practices" and took part in the discussion on the problems and perspectives of social media use. The seminar and workshop were held with the support of the Centre for Distance Education and Polish Scientific Society of Online Education. During the seminar and workshop, there were several meetings with the representatives of all these institutions.

#### Workshops:

1. 13 October 2016 – workshops on robotics in education, conducted by mgr Wojciech Zuziak during visiting two schools in Bielsko-Biała. The first school was ZSO ZCBM in Bielsko-Biała. We took part in the workshop on robotics together with pupils from this school. During the workshop, we programmed Lego robots in collaboration with children. In the second school (Szkoła Podstawowa Towarzystwa Szkolnego im. M. Reja), the researchers visited two different classes. The first one was in primary school, connected with using Scratch technology for learning to programme. Children made their own projects on tablets. The second class was in secondary school. It was an additional class for children who were interested in computer technologies and wanted to improve their skills. There pupils were making individualised projects, each in its own topic and level of difficulty.
2. 17 October 2016 – Project workshop, conducted by prof. Eugenia Smyrnova-Trybulska from US, Poland. The activities were as follows: getting acquainted with the electronic system of International Journal of Research in E-learning; registering and creating authors' and readers' profiles (the system is very comfortable and allows to submit and track all journal materials); discussing the prospects of the journal. Prof. Nataliia Morze presented their university's (BGKU) open journal system, and described all stages and options of the journal Open E-environment of Modern University.

3. 19 October 2016 – Project meeting and workshop. Prospective cooperation within new projects was discussed, for example, Erasmus Mundus, Horizon H2020, and also some possible other funds: <http://ncn.gov.pl/finansowanie-nauki/konkursy/typy>, <http://ncn.gov.pl/finansowanie-nauki/konkursy?language=pl>.
4. 27–28 October 2016 – seminar and workshop were held with the support of the Centre for Distance Education and Polish Scientific Society of Online Education during an academic trip to Warsaw. During the trip the researchers took part in several events, including the seminar and workshop in Warsaw University of Technology (27 October 2016) "European educational programmes." The HSPU team presented the report "Informatization of teachers' professional activities and new educational practices" and took part in the discussion on the problems and perspectives of social media use. Researchers from BGKU gave the following lecture "Open university educational e-environment in view of professional training quality issue," DSTU – "University students' personal learning environment," US – "Assumptions, objectives and expected results of the project for Universities in Eastern and Western Europe and Australia: Some results."
5. 28 October 2016 – visiting Copernicus Science Centre, an educational centre in Warsaw (<http://www.kopernik.org.pl/>). We took part in the educational activities and workshops, offered by the Copernicus Science Centre programme.

### **Secondment of LU, OU, US to BGKU (November–December 2016)**

The transfer of knowledge activities during the secondment were focused on Education of children and youth in culturally diverse environments: Experiences – problems – prospects.

Workshops:

1. 8 November 2016 – lecture and workshop "Information competence for modern students," conducted by prof. Paulo Pinto with participation of students and academic teachers from BGKU.
2. 16 November 2016 – lecture and workshop "Natural and programming languages: Patterns and acquisition," conducted by prof. Paulo Pinto with participation of students and academic teachers from BGKU.
3. 28 November 2016 – workshop "Study and analyzing the forms, methods of effective use of the ICT, psychological and pedagogical fundamentals for teaching students," conducted by researchers from US, Poland dr hab. Barbara Grabowska, dr Łukasz Kwadrans, dr hab. Anna Szafrńska-Gajdzica with participation of students and academic teachers from BGKU.
4. 29 November 2016 – workshop "Cooperation in international exchange and scientific projects," conducted by researchers from US, Poland dr hab. Barbara Grabowska, dr Łukasz Kwadrans, dr hab. Anna Szafrńska-Gajdzica with participation of students and academic teachers from BGKU and researchers from OU, the Czech Republic.

5. 1 December 2016 – workshop “E-learning and intercultural competences in their professional activities,” conducted by researchers from US, Poland dr hab. Barbara Grabowska, dr Łukasz Kwadrans, dr hab. Anna Szafrńska-Gajdzica with participation of students and academic teachers from BGKU and researchers from OU, the Czech Republic.

### **Secondment of US, UKF, UEx, OU to CU (November–December 2016)**

IRNet researchers worked continually on Task 6.1 according to the presentation from 12 September 2016. Researchers familiarised themselves with the proposed methodology, which aims to develop and implement a justification for the computer-oriented, theoretical, and methodological scientific system of preparation of contemporary specialists, in particular future as well as in-service teachers in the ICT area, e-learning, and intercultural competencies at the pedagogical faculties of universities. IRNet researchers from US, UKF, UEx, and OU read and summarised the available professional standards for teachers like Australian Professional Standards for Teachers, DigComp 2.0, DigCompTech, and UNESCO ITC Competency Framework for Teachers. Researchers collaborated in the following outputs according to Task 6.1. Basic assumptions were developed and theoretically justified; the discussion was opened on how to experimentally verify the concept of developing IT competences of future and in-service teachers in the use of ICT and e-learning and other specialists in their professional activities. In addition, the analysis of the existing syllabus of the university in several study programmes related to the in-service teachers’ education was elaborated. IRNet researchers discussed the proposal of the chapter “Teacher’s training for digital teaching/learning in the multicultural environment” to be published in E-learning methodology – Implementation and evaluation monograph.

#### Workshops:

1. 15 November 2016 – meeting and scientific seminar on IRNet project implementation of WP5 results and conception of methodology of WP6 IRNet project. The activities included: progressing the preparation of the MOOC “ICT tools in e-learning” (<http://el.us.edu.pl/weinoe>), a new MA course degree in the context of the future projects. Participants of the meeting and seminar and IRNet project researchers are: prof. Eugenia Smyrnova-Trybulska, prof. Ewa Ogrodzka-Mazur, prof. Anna Gajdzica (University of Silesia in Katowice, Poland); dr Milan Chmura (Ostrava University, the Czech Republic); prof. Enrique Iglesias (University of Extremadura, Spain); dr Tomayess Issa (Curtin University, Australia); dr Martin Drlík, dr Martin Cápaj, dr Peter Švec, dr Júlia Tomanová (Constantine the Philosopher University in Nitra (UKF), Slovakia).
2. 15 November 2016 – workshop during visiting the HIVE – “Western Australian visualisation, virtualisation and simulation researchers now have a new facility to meet their growing demands, with the opening of Curtin University’s Hub for Immersive Visualisation and eResearch (HIVE)” (“Buzz about visualisation at new HIVE...”). “The movie industry tends to show learning in the future as an

ultra-realistic, immersive, and immediate process. While it's still a challenge to achieve such sophisticated solutions portrayed in movies, both industry and academia are catching up” (“Immersive technology in full use at Curtin’s HIVE...”). During the meeting with Curtin University’s Hub for Immersive Visualisation and eResearch (HIVE), the staff conducted a discussion about joint research of the IRNet Consortium and project partners with Curtin University and with HIVE in particular.

3. 17 November 2016 – Curtin Library tour and workshop, conducted by Director of Curtin University Library, and meeting with library staff, with participation of IRNet researchers: prof. Eugenia Smyrnova-Trybulska, prof. Ewa Ogrodzka-Mazur, prof. Anna Gajdzica (University of Silesia in Katowice, Poland); dr Milan Chmura (Ostrava University, the Czech Republic); prof. Enrique Iglesias (University of Extremadura, Spain); dr Tomayess Issa (Curtin University, Australia); dr Martin Drlík, dr Martin Cápaj, dr Peter Švec, dr Júlia Tomanová (Constantine the Philosopher University in Nitra (UKF), Slovakia).
4. 18 November 2016 – workshop during visiting the Centre of Aboriginal Study (Building 211), with participation of IRNet researchers – prof. Eugenia Smyrnova-Trybulska, prof. Ewa Ogrodzka-Mazur, prof. Anna Gajdzica (University of Silesia in Katowice, Poland); dr Milan Chmura (Ostrava University, the Czech Republic); prof. Enrique Iglesias (University of Extremadura, Spain); dr Tomayess Issa (Curtin University, Australia); dr Martin Drlík, dr Martin Cápaj, dr Peter Švec, dr Júlia Tomanová (Constantine the Philosopher University in Nitra (UKF), Slovakia) – in the excursion and workshop, conducted by the specialists and researchers of the Centre. There was a merit-related discussion concerning future cooperation in the area of intercultural competences development and use of social media in the strengthening of the international cooperation and future projects.
5. 22 November 2016 – workshop, meeting, and seminar with lecturers and researchers from Department of the Education (building 408), with the participation of dr Julian Chen (<http://oasisapps.curtin.edu.au/staff/profile/view/Julian.Chen>), dr Toni Dobinson (<http://oasisapps.curtin.edu.au/staff/profile/view/162171A>), dr Paul Mercieca (<http://oasisapps.curtin.edu.au/staff/profile/view/P.Mercieca>), and IRNet researchers prof. Eugenia Smyrnova-Trybulska (University of Silesia in Katowice, Poland), prof. Enrique Iglesias (University of Extremadura, Spain), dr Tomayess Issa (Curtin University, Australia), dr Martin Drlík, dr Martin Cápaj, dr Peter Švec, dr Júlia Tomanová (Constantine the Philosopher University in Nitra (UKF), Slovakia). The meeting’s main aims were: to share the progress of the IRSES programme with Curtin in order to identify opportunities and agree on the short and long term goals; short statement about Curtin’s involvement in the IRSES programme; progress to date; future goals; joint MA course degree, and applying to Erasmus Mundus; joint PhD supervision – Curtin and other universities of the EU;

exchange of students and staff (Curtin and EU universities); future research collaboration and publications between EU with Curtin staff; future endeavours and future research (including publications: journals, conferences, chapters, books); Grants – EU and Australia; agreements – teaching and research.

### **Secondment of BGKU, HSPU, DSTU to UEx (February–March 2017)**

The transfer of knowledge activities during this secondment was focused on:

- ICTs in higher education,
  - internationalisation, and
  - new methods for teaching and learning.
1. 1 March 2017 – IRNet project meeting; chair – prof. Eugenia Smyrnova-Trybulska, prof. Sixto Cubo; participants: BGKU team, DSTU team, US team, UEx team. The discussion was about: hosting plan tasks on WP6 and subsequent deliverables; components to build a model of educational disciplines, in particular the content of theoretical material for learning programming pedagogic and ICT disciplines of higher education institutions; approach to the development of ICT competences of future teachers, including e-learning; a theoretical model of information system development competence of future teachers; the concept of departmental (regional) environmental information and education, and information in a methodical system of a distance education platform.
  2. 1 March 2017 – workshop on digital storytelling; moderators: UEx team (prof. Rafael Espado). The discussion was about:
    - c) the concept of digital storytelling;
    - d) results of measurement according to Nuclear Concepts theory;
    - e) ICT tools for digital storytelling assessment;
    - f) methods of digital storytelling assessment;
    - g) measurement of digital storytelling skills enhancement:
      - mind mapping,
      - conceptualisation and categorisation,
      - concept similarities identification,
      - background and leftover knowledge accumulation through conceptual mapping.
  3. 14 March 2017 – meeting and workshop “Formation 21 century skills of future teachers through the use of ICT” (UEx, Spain).

Coordinators of the workshop were: Laura Alonso, Juan Arias, Sixto Cubo, Gemma Delicado, Prudencia Gutiérrez, Rafael Martín, Rocío Yuste (University of Extremadura). Participants were: Laura Alonso, Juan Arias, Prudencia Gutiérrez, Olga Yakovleva, Tetiana Liakh, Rusudan Makhachashvili, Nataliia Morze, Tatiana Noskova, Tatiana Pavlova, Maryna Romaniukha, Liudmyla Sorokina, Irina Vorotnykova, (University of Extremadura, Herzen State Pedagogical University of Russia, Dniprodzerzhinsk State Technical University, Borys Grinchenko Kyiv University).

The meeting and seminar took place at Guidance and Teacher Training Service (SOFD).

The goal of the centre is to facilitate teacher education and training for teachers, with particular emphasis on their preparation for European convergence and the application of information and communication technologies. The department is structured around training programmes for lecturers, novice lecturers, and teaching innovation projects. Training programmes for lecturers are divided for areas:

- ICTs in higher education (concentrates around Moodle LMS and the ways to integrate technology into teaching in higher education; provides virtual, semi-virtual, attendance, and flipped classes);
- teaching, quality, and management (focuses on new methods for teaching and learning, problem-solving, and similar issues);
- research (aims to improve planning, data collection, analysis, and reporting);
- academic English (is organised up to intermediate and advanced levels).

The training in Innovation projects is structured around such areas as:

- ICTs in higher education,
- Internationalisation, and
- new methods for teaching and learning.

There is a growing trend among university staff in academic years 2012-2013 – 2016-2017 to improve different kinds of competencies. More information is available at <https://www.unex.es/organizacion/servicios-universitarios/servicios/sofd/General%20Information>.

### **Secondment of UEx, OU to HSPU (April–May 2017)**

The transfer of knowledge activities during this secondment was focused on: analysis and research of new educational strategies in the contemporary digital environment, personal learning environment, and professional education and e-learning.

1. 12 April 2017 – final round table debates of the international conference New Educational Strategies in the Contemporary Digital Environment. The participants discussed the results and the outcome of the conference. The IRNet team presented several articles for the conference:
  - b) Josef Malach, Kateřina Kostolányová, Milan Chmura, Ingrid Nagyová, & Tatiana Prextova (Faculty of Education, University of Ostrava, the Czech Republic), “ICT coordinators at school. Competences, performance and training”;
  - c) Juan Arias Masa, Rafael Martín Espada, Gemma Delicado Puerto, & Prudencia Gutiérrez Esteban (University of Extremadura, Spain), “Collaborative distance ongoing project for university students located in different campuses”;
  - d) Martin Cápay, Martin Drlík, Peter Švec, & Júlia Tomanová (University of Constantine the Philosopher in Nitra, Slovakia), “Experience-Based Learning: Best Practices for Informatics Education”;

- e) Tatiana Noskova (Herzen State Pedagogical University of Russia), “The implementation of teaching methods in the electronic information environment”;
  - f) Olga Yakovleva (Herzen State Pedagogical University of Russia), “Solving the problems of up-bringing in the electronic educational environment of the university.”
2. 19 April 2017 – international seminar “E-learning: New practices.” Presenters and participants were the International IRNet project researchers from the University of Extremadura (Spain) and University of Ostrava (the Czech Republic). The Spanish team presented their experience in the presentation “IT tools for developing collaborative work in digital learning environments.” The Czech team presented the report about “ICT coordinators at schools.” The HSPU team shared some practical approaches from the experience of developing the module “Formative Assessment” in the e-course “ICT tools for e-learning.”
  3. 20 April 2017 – visiting musical computer laboratory and workshop; visiting the central server of the University.
  4. 20 April 2017 – workshop “3D printing in education and science,” conducted by the University of Potsdam. It involved meeting with students and presenting reports: University of Potsdam (Germany) – report “Professional education in Germany,” University of Extremadura (Spain) – report “Personal learning Environment,” University of Ostrava (the Czech Republic) – report “Andragogy.”

### **Secondment of BGKU, HSPU, DSTU to OU (May–June–July 2017)**

The transfer of knowledge activities during this secondment was focused on: new technological instruments to aid e-learning and learning, intellectual rights and electronic instruments for antiplagiarism, research into ways of managing international student and academic exchange, language studies as a prerequisite of students’ performance in exchange programmes.

1. 16 May 2017 – visit to an eye-tracking laboratory and workshop, conducted by specialist and expert of laboratory Ing. Libor Jedlička from the University of Ostrava. The activities included: meeting with the laboratory staff, observing the work, discussing the main goals of the laboratory for students’ research, a meeting in the eye-tracking laboratory with Ing. Libor Jedlička. Researchers were introduced to the main instrument of the centre – Tobii TX 300 Eye Tracker, made in Sweden. The centre has a wide range of applications for the pedagogy, mainly focusing on the way different types of learners perceive information, presented in digital mode; the Tobii station has all possible instruments for research – sensors to measure different sensitivity in order to measure stress from reading an unfamiliar text or deciphering puzzling tasks. Besides, the Tobii station is equipped with the software to measure the saccades (pauses of eye focus on a certain area of the text); it has great potential

in improving the layout of both printed and digital educational materials. Currently, the eye-tracking laboratory boasts a research into facilitation of reading adoption by primary schoolchildren.

2. 4 July 2017 – seminar with Dr, Ph Dr Prof. Julius Sekera – head of the Department of Social Pedagogy. The department has two main scientific and pedagogical interests: difficult life situations for children and parents, and social development and development of personality. Students mostly have internships in institutions dealing with child care, child crime, and psychotherapy. Bachelor students have internships in orphanages, in creative circles, while master students are sent to upbringing institutions, like therapeutical child colonies and re-socialisation communities. Prof Sekera has stressed the pressing problem of ghettoisation in the Gypsy community, which has serious social, economic, and urban consequences.
3. 4 July 2017 – meeting with Pavla Nemethova, an international officer from the Faculty of Social Studies. The Faculty of Social Studies cultivates extensive international links with over 50 universities, frequently welcoming guest lecturers from its international partners to teach courses for master’s and doctoral degrees. Bachelor’s degrees are: Social Work programme, Health Care, Social, Community Development programme. Master’s degrees are: Social Work, Management of Social Work Organisations, Joint Degree programme in conjunction with international partner universities in Austria (Fachhochschule Campus Wien) and Slovakia (University of Trnava), Coordination of Rehabilitation, and Long-term Health and Social Care. A doctoral degree is Social Work. Faculty research teams collaborate with the European Research Institute for Social Work (ERIS) and focus on exclusion – a phenomenon which represents a serious threat to social integrity and cohesion in contemporary society. Researchers from the faculty work with a number of specific target groups: people suffering exclusion from housing, excluded seniors, individuals who suffer from long-term or terminal illness and/or permanent disability.
4. 28 June 2017 – seminar with mgr Ivona Cindlerova from the Centre of Foreign Language Preparation. The centre holds courses for all students of pedagogical faculty in English (90%), German, Spanish, and French. Besides, there are courses on Intercultural Studies for exchange Erasmus Students (mainly students from Spain, Poland, Portugal, Ukraine, and Lithuania). There is also a special professional language course for future primary school teachers.

## Conferences

1. 5–7 September 2016 – ICTE2016, organised by the University of Ostrava, the Czech Republic, with the participation of near 75 participants from different countries. The book has been published: Kostolányova, K. (Ed.). (2016). Proceedings from Information and Communication Technology in Education (ICTE-2016), 17th Annual Conference. Ostrava: University of Ostrava.

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2. 9–11 October 2016 – International Scientific Conference DLCC2016 ([www.dlcc.us.edu.pl](http://www.dlcc.us.edu.pl)) Theoretical and Practical Aspects of Distance Learning 2016 (E-learning Methodology – Implementation and Evaluation), held at the University of Silesia, Poland. Within a framework of the conference there were held several events particularly connected with IRNet activities.

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- Communication Technologies in Education, 5(3), 21–33. Retrieved from <https://periodicals.osu.edu/ictjournal/index.php?kategorie=8>.
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## Acknowledgements

The research leading to these results has received, within the framework of the IRNet project, funding from the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme FP7/2007-2013/ under REA grant agreement No: PIRSES-GA-2013-612536.

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### **Raport z wdrożenia Pakietu Roboczego WP6 „Wdrożenie metodologii” opracowanego w ramach projektu IRNet**

#### Streszczenie

Niniejszy artykuł, przygotowany przez zespół badaczy specjalizujących się w różnych dziedzinach naukowych związanych z technologiami komunikacyjnymi i informacyjnymi, pedagogiką oraz dyscyplinami pokrewnymi, przedstawia cele i niektóre rezultaty badań przeprowadzonych w ramach międzynarodowego projektu IRNet ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl)). W szczególności opisane zostały narzędzia badawcze, metody, a także procedury zawarte w pakiecie zadań nr 6 „Wdrożenie metodologii”. W artykule omówiono cele, wykonane zadania, wyniki, publikacje, spotkania naukowe oraz kolejne etapy prac i przedsięwzięć projektowych.

**Słowa kluczowe:** międzynarodowa sieć badawcza IRNet, metodologia, technologie informacyjne i komunikacyjne, e-learning, kompetencje interkulturowe

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## **Отчет о внедрении Рабочего Пакета 6 «РЕАЛИЗАЦИЯ МЕТОДОЛОГИИ» в рамках проекта IRNet**

### **А н о т а ц и я**

В этой статье, подготовленной международной группой исследователей из разных научных областей, связанных с ИКТ, электронным обучением, педагогикой и другими смежными дисциплинами, основное внимание уделяется целям и некоторым результатам международного проекта IRNet ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl)). В частности, в статье описываются инструменты исследования, методы и процедура Рабочего Пакета 6 «РЕАЛИЗАЦИЯ МЕТОДОЛОГИИ», а именно: цели, задачи, результаты, публикации и осуществление исследовательских поездок в контексте реализации этапов и рабочих пакетов Проект IRNet - Международной исследовательской сети.

**К л ю ч е в ы е с л о в а:** международная исследовательская сеть IRNet, методология, ИКТ, электронное обучение, межкультурные компетенции

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## **Informe sobre la implementación de WorkPackage 6 „IMPLEMENTACIÓN DE METODOLOGÍA“ en el marco del proyecto IRNet**

### **R e s u m e n**

Este artículo, preparado por un equipo internacional de investigadores de diferentes áreas científicas, relacionado con las TIC, el e-learning, la pedagogía y otras disciplinas relacionadas, se centra en los objetivos y algunos resultados del proyecto internacional IRNet ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl)). En particular, el artículo describe herramientas de investigación, métodos y un procedimiento del WorkPackage 6 “IMPLEMENTACIÓN DE METODOLOGÍA”, es decir: objetivos, tareas, entregas, publicaciones e implementación de viajes de investigación en el contexto de las siguientes etapas y paquetes de trabajo de Proyecto IRNet - Red Internacional de Investigación.

**P a l a b r a s c l a v e:** red internacional de investigación IRNet, metodología, TIC, e-learning, competencias interculturales