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## **Report on the Implementation of Work Package 5 “Pilot Methodology Development” 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. In particular, the article describes research tools, methods, and a procedure of the Work Package 5 (WP5), that is, objectives, tasks, deliverables, 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, ICT, e-learning, intercultural competencies, methodology

## Introduction

The objectives of the Work Package 5 (WP5) are: to develop, to theoretically justify, and to experimentally verify the basic concept of shaping the location of ICT teachers' competencies in the use of information and communication technologies and remote forms of teaching in their professional activities, as well as the basic components of a computer-oriented system of methodical preparation of contemporary specialists (in particularly future and active teachers) to use ICT and distance forms of teaching in the educational process and intercultural competencies. To specify, the aims are to develop the content, forms, methods, technologies, but also to define and to test a computer-oriented methodical and theoretical scientific system for development of competencies.

## Description of Activities

The content, forms, methods, and technologies have been developed. A computer-oriented methodical and theoretical scientific system for competencies development has been defined and tested. It includes:

- psychological and pedagogical aspects;
- organisational and methodical security curriculum;
- implementation of the social contract in such educational requirements for training future and in-service teachers;
- protection of the learning process of computerisation measures;
- information, methodological, and technical support of the school and the cognitive activity of in-service and future teachers and other specialists with extensive use of distance forms of learning, based on Internet technologies; and
- adequate information on competencies components including e-learning and intercultural competencies.

Teaching and learning methodology and knowledge transfer process have been subjects of a series of debates. General aspects and details of the methodological approach have been discussed.

## Main Topics and Objectives

Main topics are:

- general environment of theories and methodologies of online teaching and learning,
- self-learning approaches and techniques, and
- learning styles and teaching process.

Objectives and teaching taxonomies are:

- teaching methods,
- face-to-face pedagogical techniques versus distance techniques,
- teaching models,
- pedagogic management of the project,
- planning and coordination of courses,
- personal and institutional ICT plans,
- methodology and techniques of e-learning,
- methodology of producing e-content, and
- evaluation of the teacher’s skills necessary to work in an ICT environment.

IRNet researchers conducted analyses of some methodological aspects of developing MOOCs, such as microlearning, subscription learning, peer assessment as well as presenting and analysing the research outcomes, research results of a survey conducted among students of several countries within the framework of the European Union project IRNet ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl)), limitations and future research. A draft version of the MOOC “ICT-tools in e-learning” (<http://el.us.edu.pl/irnet>) was elaborated. It includes 10 topics: e-learning in higher education; ICT tools for presentation of multimedia content and tools for making didactic videos; tools for adaptive learning, learning styles; tools for mind maps and infographics knowledge; gamification in education; ICT tools for collaboration; tools for formative assessment and control; Digital Storytelling; ICT tools for developing intercultural competences; and social presence in online tutoring.

## Tasks

**Task 5.1.** Defining some most important skills of the contemporary specialist course profile.

Some most important skills of the contemporary specialist course profile were identified and published in:

- 1) Nagiyova, I. (2016). Constructivism in teaching of basic computer skills. In K. Kostolányova (Ed.), *Proceedings from Information and Communication Technology in Education (ICTE-2016), 17<sup>th</sup> Annual Conference* (pp. 124–132). Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictel/dokumenty/2016/proceedings ICTE2016.pdf>.
- 2) Noskova, T., Pavlova, T., & Yakovleva, O. (2016). Social media: New educational practices and competences. In *Proceedings from Applied Linguistics in Science and Education*, 24–26 November 2016 (pp. 310–315). Saint-Petersburg: HSPU.
- 3) Smyrnova-Trybulska, E. (Ed.). (2016). *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8. Katowice-Cieszyn: Studio Noa for University of Silesia.

**Task 5.2.** Identification and theoretical justification of the principles, forms, and methods of the effective use of the ICT and remote forms of teaching in the education in higher pedagogical educational institutions.

The theoretical justification of the principles, forms, and methods of the effective use of the ICT and remote forms of teaching in the education in higher pedagogical educational institutions has been identified and published in a series of articles and books:

- 1) Turčáni, M., Balogh, Z., Munk, M., & Benko, L. (Eds.). (2016). Proceedings from *DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics*, 2–4 May 2016. Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Informatics. Nitra: Wolters Kluwer.
- 2) Smyrnova-Trybulska, E. (Ed.). (2016). *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8. Katowice-Cieszyn: Studio Noa for University of Silesia.
- 3) Morze, N. (2016). Open educational e-environment of modern university. Introduction. In N. Morze (Ed.), *Open educational e-environment of modern university (2)* (pp. 7–10). Kiev: Borys Grinchenko Kiev University. Retrieved from <http://openedu.kubg.edu.ua/journal/index.php/openedu/issue/view/2/showToc#.V-y1IDUudZc>.
- 4) Morze, N. & Vorotnikova, I. (2016). Модель ІКТ компетентності вчителів. *Journal ScienceRise: Pedagogical Education*, 10(6), 4–9.  
Aims of the practical implementation of WP5 have been elaborated:
  - development verified in empirical research of the e-learning course MOOC “ICT-tools for e-learning,” the improving efficiency of the educational process-oriented development of ICT and e-learning competencies, and other components of the system such as content, means, methods, forms of teaching, and so on;
  - development of the curriculum of an MA course, the international specialisation and start in the frame of the Erasmus Mundus programme.
 Differentiation of the aims:
  - 1.1. Global (general) aims
  - 1.2. Detail (specific) aims  
Planned development of:
    - 2.1. Knowledge
    - 2.2. Skills
    - 2.3. Social competencies  
Planned development of competencies of the 21<sup>st</sup> century:
      - 3.1. Specific competencies
      - 3.2. Key competencies
      - 3.3. Soft competencies

There has been elaborated a draft learning system conception. The content includes:

- 1) MOOC “ICT-tools for e-learning” (10 modules) – two versions:
  - 1<sup>st</sup> level, core version (videos, tests);
  - 2<sup>nd</sup> level, advanced version, full course (includes: videos, tests, forum, tasks, projects, other activities).
- 2) MA course “E-learning in cultural diversity” (curriculum).  
Additional contents are:
  - postgraduate studies;
  - teacher training courses;
  - international and native distance learning courses; and
  - monographs, scripts, publications, other.

**Task 5.3.** Development of a computer-oriented methodological and theoretical scientific system for training contemporary specialists.

A computer-oriented methodological and theoretical scientific system for training contemporary specialists has been developed and published in:

- 1) Smyrnova-Trybulska, E. (Ed.). (2016). *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8. Katowice-Cieszyn: Studio Noa for University of Silesia.
- 2) Morze, N. (Ed.). (2016). *Open educational e-environment of modern university (2)*. Kiev: Borys Grinchenko Kiev University. Retrieved from <http://openedu.kubg.edu.ua/journal/index.php/openedu/issue/view/2/showToc#.V-y1IDUudZc>.
- 3) Kostolányova, K. (Ed.). (2016). Proceedings from *Information and Communication Technology in Education (ICTE-2016), 17<sup>th</sup> Annual Conference*. Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictedokumenty/2016/proceedings ICTE2016.pdf>.
- 4) Turčáni, M., Balogh, Z., Munk, M., & Benko, L. (Eds.). (2016). Proceedings from *DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics, 2–4 May 2016*. Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Informatics. Nitra: Wolters Kluwer.

For more information, see the *Theoretical and Methodological Bases* section.

**Task 5.4.** Development of theoretical-methodological, psychological, pedagogical, and methodological foundations of distance learning science based on Internet technologies.

The theoretical-methodological, psychological, pedagogical, and methodological foundations of distance learning science based on Internet technologies have been developed and published in:

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

- 2) Morze, N. (Ed.). (2016). *Open educational e-environment of modern university* (2). Kiev: Borys Grinchenko Kiev University. Retrieved from <http://openedu.kubg.edu.ua/journal/index.php/openedu/issue/view/2/showToc#.V-y1IDUudZc>.
- 3) Kostolányova, K. (Ed.). (2016). Proceedings from *Information and Communication Technology in Education (ICTE-2016), 17<sup>th</sup> Annual Conference*. Ostrava: University of Ostrava. Retrieved from <https://konference.osu.cz/ictedokumenty/2016/proceedings ICTE2016.pdf>.
- 4) Turčáni, M., Balogh, Z., Munk, M., & Benko, L. (Eds.). (2016). Proceedings from *DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics, 2–4 May 2016*. Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Informatics. Nitra: Wolters Kluwer.

**Task 5.5.** Dissemination of the research results: lectures, seminars, other activities.

During the implementation of WP5 more than 100 lectures and presentations have been organised, conducted, and presented. Presentations of IRNet researchers with description are attached in Annex 2 and uploaded to Participants Portal EC with the main project periodical report. All information about the dissemination is available on the project's website ([www.irnet.us.edu.pl](http://www.irnet.us.edu.pl), <http://www.irnet.us.edu.pl/dissemination>) and on Facebook (<https://www.facebook.com/IRNet-1669593856645370/>).

**Task 5.6.** Project events: conferences, workshops, and roundtables.

During the implementation of WP5 more than 50 project events have been organised and realised: 7 international scientific conferences, more than 25 workshops and seminars, more than 20 roundtable debates, and other activities. The presentation of IRNet researchers description is attached in Annex 2 and uploaded to Participants Portal EC with the main project periodical report.

**Task 5.7.** Account identifying and characterising organisational forms, models, distance learning and remote types of courses, case-technologies, social media, Web 2.0 and Web 3.0. Massive Open Online Courses, virtual classroom, Internet-courses and selected IT tools tested during WP4, such as LMS (Learning Management Systems), CMS (Contents Management Systems), VSCR (Virtual Synchronous Classrooms), SSA (Screen Share Applications), CSA (Contents Sharing Application), cloud computing environment, virtual campus, and virtual learning environment.

- 1) Delicado Puerto, G., Arias Masa, J., Alonso Díaz, L., Yuste Tosina, R., Gutiérrez Esteban, P., & Cubo Delgado, S. (2016). Synchronous Virtual Classrooms in problem-based learning to mentor and monitor students in higher education. In *New Educational Strategies in Modern Information Space. E-learning Methodology Proceedings* (Scientific papers) (pp.10–14). Saint-Petersburg: HSPU.

- 2) Cápaj, M., Drlík, M., Švec, P., Tomanová, J., Romaniukha, M., & Sorokina, L. (2016). Attitudes and expectations on virtual environments of the universities. In M. Turčáni, Z. Balogh, M. Munk, & L. Benko, (Eds.), *Proceedings from DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics, 2–4 May 2016* (pp. 273–285). Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Informatics. Nitra: Wolters Kluwer.
- 3) Buinytska, O. (2016). E-education content management. In E. Smyrnova-Trybulska, (Ed.), *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8 (pp. 451–466). Katowice-Cieszyn: Studio Noa for University of Silesia.
- 4) Smyrnova-Trybulska, E. (Ed.). (2016). *E-learning methodology – Implementation and evaluation*, Scientific Monograph, Vol. 8. Katowice-Cieszyn: Studio Noa for University of Silesia.

**Task 5.8.** *Pedagogical and Technological Aspects Using Virtual Classrooms – videoconference conducted by UEx (Spain).*

A videoconference *Pedagogical and Technological Aspects Using Virtual Classrooms* was organised and conducted by prof. Laura Alonso and prof. Prudencia Esteban from UEx (Spain) in September 2016 with the participation of IRNet researchers from Spain, Russia, Poland, Portugal, Ukraine, Slovakia, Australia, and the Netherlands in presence and remote mode via Adobe Connect (virtual room URL address: <http://uex.adobeconnect.com/irnet>).

**Task 5.9.** Workshop and e-round table debate in LU (Portugal).

On 2 February 2016, an international scientific seminar, workshop, and e-round table debate, *Preparing to be a blended teacher in the 21<sup>st</sup> century*, took place in Lusitana Lisbon University, Portugal with the participation of near 35 participants from different countries, in particular researchers from Poland, Spain, Ukraine, Russia, and Portugal.

**Task 5.10.** Meeting and workshop in UT (the Netherlands).

The meeting was held on 23 November 2017 at the Curtin University. Prof. Piet Kommers from UT, NL conducted a seminar and workshop on MOOCs in education. Additionally, a round table debate was held with the participation of researchers from UT, NL, US, PL, OU, CZ, CU, and AU at the Curtin University, AU.

**Task 5.11.** *E-learning Methodology* conference and workshop in HSPU (Russia).

On 13 April 2016, an international scientific conference *New Educational Strategies in the Contemporary Information Environment: E-learning Methodology* took place, organised by HSPU, SPB, Russia. There were more than 40 participants from different countries (Spain, Poland, Russia, Slovakia, Australia, and other). Participation in plenary sessions, thematic conference sessions, and round table debates was possible. As a result, a book was published: *New Educational Strategies in Modern Information Space. E-Learning Methodology Proceedings* (Scientific papers). (2016). Saint-Petersburg: HSPU. The book included the best articles,

elaborated by conference participants, in particular 4 IRNet papers with some project results (more details in Annex 1 “IRNet Publications” at Participants Portal EC). **Task 5.12.** *DIVAI 2016* conference, UKF (Slovakia).

On 2–4 May 2016, there was an international scientific conference *DIVAI 2016 (Distance Learning in Applied Informatics)* in UKF (Slovakia) with the participation of more than 80 participants from different countries. A book was published: Turčáni, M., Balogh, Z., Munk, M., & Benko, E. (Eds.). (2016). *Proceedings from DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics, 2–4 May 2016*. Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Informatics. Nitra: Wolters Kluwer. It included the best articles, elaborated by conference participants, in particular 5 IRNet papers with project results (more details in Annex 1 “IRNet Publications” at Participants Portal EC).

**Task 5.13.** *The skills of scientific communication among faculty using repositories, wiki technology, e-libraries* conference, DSTU (BGKU) (Ukraine).

On 9 September 2016 – *Open Educational E-environment of the Modern University (The skills of scientific communication among faculty using repositories, wiki technology, e-libraries)* (<http://openedu.kubg.edu.ua/>) was held at the Borys Grinchenko Kyiv University (BGKU) (Ukraine). Conference objectives were: trends and strategies of the open educational resources development, formation of the university’s open educational e-environment as a factor of increasing the quality of education, problems and prospects of interaction of the subjects in the open educational environment in the process of professional training, blended and distance learning as a way of access to quality education, and lifelong learning – the process and the motivation to use open educational resources. A book was published: Morze, N. (Ed.). (2016). *Open educational e-environment of modern university (2)*. Kiev: Borys Grinchenko Kiev University. Retrieved from <http://openedu.kubg.edu.ua/journal/index.php/openedu/issue/view/2/showToc#.V-y1IDUudZc>. It includes the best articles, elaborated by conference participants, in particular 10 IRNet papers with project results (more details in Annex 1 “IRNet Publications”).

## Deliverables

During the period, a number of deliverables were achieved for the WP5.

**D 5.1. Month 28** – *E-learning methodology* – scientific monograph; *New Educational Strategies in Modern Information Space. E-Learning Methodology Proceedings* (Scientific papers) (HSPU and all researchers).

**D 5.2. Month 29** – Publications in *DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics* Conference Proceedings (UKF, Slovakia).

**D 5.3. Month 31** – Elaboration of new methods of research and diagnostics.



As a product of modern telecommunication technology-based systems, e-learning turns out to be an efficient tool for bridging the distance gap on the Internet. In fact, e-learning is not a remote learning tool; it is a tool for overcoming the distance gap as such. That is why distance learning and e-learning are not to be included into one category. The distance gap is completely bridged for the parties involved in an e-learning session within the framework of instructors-to-students and students-to-students interactions. If a rationalised approach to e-learning is used, reasonable managers of “state-of-the-art” universities do not use a traditional break-up scheme in their descriptions of learning modes (face-to-face and correspondence courses). They speak about various forms of integrated learning. This mode includes the face-to-face mode used in combination with modern ICT, and this is what transfers the learning process into the virtual reality.

Knowledge Management – both of data, information to gain knowledge, and then competence – Theory and Practice. WP5 groundwork methodological framework is the ADDIE model.

**D 5.4. Month 31** – Developing pilot methodology of enhancing ICT and e-learning competencies, as well as intercultural awareness by means of Internet technologies: LCMS systems (Moodle), Massive Open Online Courses, virtual classroom technology, social media, other selected Web 2.0 and Web 3.0. Technology, and other technologies.

A pilot questionnaire was derived and implemented for the diagnostics of the open course means most efficient to cater to the e-learning expectations of consortium universities. Some results have been published in:

- 1) Smyrnova-Trybulska, E., Ogrodzka-Mazur, E., Szafrńska-Gajdzica, A., Morze, N., Makhachashvili, R., Noskova, T., Pavlova, T., Yakovleva, O., Issa, Tomayess, & Issa, Theodora. (2016). MOOCs – Theoretical and practical aspects: Comparison of selected research results: Poland, Russia, Ukraine, and Australia. In P. Kommers, Tomayess Issa, Theodora Issa, E. McKay, & P. Isaías (Eds.), *Proceedings from the International Conferences on Internet Technologies & Society 2016 (ITS 2016), Educational Technologies 2016 (ICEduTech 2016), and Sustainability, Technology and Education 2016 (STE 2016)*, Melbourne, 6–8 December, 2016 (pp. 107–114). IADIS.
- 2) Smyrnova-Trybulska, E. (2016). Selected aspects of effective use of didactic videos and MOOCs in education. In *New Educational Strategies in Modern Information Space. E-Learning Methodology Proceedings* (Scientific papers) (pp. 15–26). Saint Petersburg: HSPU.

Based on the questionnaire results, a pilot methodology and roadmap of MOOC on ICTEL was derived:

- a sample MOOC description on “Collaboration and ICT instruments in blended learning environment” and
- ICT tools for e-learning and blended learning environment.

Massive open online courses (MOOC) are called the greatest revolution in education since the emergence of the printed book. Hundreds of leading universities create their own massive online courses, and the most popular MOOCs gather an audience of over 1 million listeners. Massive online courses as an extremely effective tool used to disseminate knowledge are used by the most authoritative international organisations such as the International Monetary Fund and Amnesty International, as well as leading global companies including Google and Microsoft.

Not only students need to master collaboration as the market demands of the professional the skills of teamwork, effective co-work. This course will help one understand all the nuances of the format features of cooperation in teaching students using ICT tools, understand whether one needs to study all existing ICT tools for cooperation and collaboration, and provide step by step instructions on how to use ICT tools in a quality online course on the possibility of further use in blended learning offered to students. IRNet researchers also consider the best evidence-based teaching practice and learn to integrate massive online courses in the educational process offline.

**D 5.5. Month 32** – Pre-trip schedules and post-trip reports outlining the secondments-related activities. Pre-trip schedules and post-trip reports outlining the secondments-related activities are presented in second part of this report.

**D 5.6. Month 32** – *Pedagogical and technological aspects using Virtual Classrooms* – a publication in the scientific international journal IJWBC. Theses in VU2016.

The article *Pedagogical and technological aspects using Virtual Classrooms* has been prepared for publication in the *International Journal of Web Based Communities* (IJWBC) and submitted via an online system of Inderscience publishing house. Theses in VU2016 have been published as an article in the scientific journal: Smyrnova-Trybulska, E. & Morze, N. (2016). From programmed teaching to constructivism and personally-oriented approach to e-learning. *EduAkcja. Magazyn edukacji elektronicznej*, 2(12), 15–28. The publication in the electronic scientific journal *EduAkcja* was conducted by the organisers of VU conference: OKNO, PTNEI, Warsaw University of Technology, Poland.

**D 5.7. Month 32** – Interim reports.

Interim reports, which include most important research results of WP5, have been prepared and uploaded to RRR. The work was coordinated by prof. Nataliia Morze, BGKU team (Ukraine).

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

The decision was made, after previous evaluation, on the implementation of the developed pilot methodology. IRNet researchers conducted analyses of some methodological aspects of developing MOOCs, such as microlearning, subscription learning, peer assessment as well as presenting and analysing the research outcomes, research results of a survey conducted among students of several countries within the framework of the European Union project IRNet ([www.irnet](http://www.irnet)).

us.edu.pl), limitations, and future research. A draft version of the MOOC “ICT-tools in e-learning” (<http://el.us.edu.pl/irnet>) was elaborated. It includes 10 topics: e-learning in higher education; ICT tools for presentation of multimedia content and tools for making didactic videos; tools for adaptive learning, learning styles; tools for mind maps and infographics knowledge; gamification in education; ICT tools for collaboration; tools for formative assessment and control; Digital Storytelling; ICT tools for developing intercultural competences; and social presence in online tutoring. The work on developing and improving MOOCs “ICT-tools in e-learning” was continued. Focus groups (approx. 10 students) from every partner country participated in this course; the results were comprehensively and deeply analysed. The surveys, filled by students and participants of the pilot version of the MOOC, confirmed generally a positive assessment of the course, stressed rich contents, a lot of videos and other multimedia materials, and contemporary topics. Simultaneously there are a number of suggestions, recommendations, proposals from side learners, such as adding subtitles in native languages and reducing the duration of videos to 10 minutes.

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).

### **Transfer of Knowledge and Training Activities (Workshops)**

The secondments provided the IRNet researchers with the opportunity to acquire new skills and experience, and learn about different working practices related to the development of new tools and methods of work in the field of ICT instruments, e-learning, and intercultural competencies, as well as to enable researchers to be more effective in the work in their own departments. In particular, the secondments provided the following support and knowledge to the project and future research opportunities:

- analysis of the methodological background and main approaches of conducting international investigations on ICT, e-learning, and intercultural competencies in order to work out a system of measuring instruments appropriate for the research at the international level;
- analysis and evaluation of the level of ICT, e-learning, and intercultural developments in every participating country applying the system of measuring instruments approved; and
- comparison of the results obtained and drawing the conclusion about the existing barriers in ICT, e-learning, and intercultural competencies, taking into consideration descriptions of the national specifics of legal, human, social, ethical, and technological factors of their implementation.

A detailed description of the transfer of knowledge and training activities during secondments is given below.

1) Secondment of DSTU, BGKU, HSPU to LU (January–February 2016)

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

- Discussing with colleagues from US, BGKU, LU the prospects of creating a new training course in a distance form; there are several options: creating a course for master degree students or creating a course for postgraduate students; the didactic videos, created within WP4, can form the basis for the course;
- Participation in the Project Seminar “Are you prepared to be a teacher in the 21<sup>st</sup> century?” with a keynote speaker, prof. Pedro Veiga, Lisbon University. The main ideas were connected with his experience as the vice-rector of the Lisbon University. Prof. Eugenia Smyrnova-Trybulska presented a report about the IRNet project’s current state, main outcomes, and prospects. Prof. Antonio dos Reis presented a report about WP4 of the IRNet project. The main focus was on didactic videos. Round table debates included several topics: presentation of contents live and video on demand, LMS and social network in education, presence and online tutoring, remote collaborative work and cloud collaboration, formative continuous assessment and summative assessment, how should we teach and learn in 100 years from now? A very interesting topic was covered by prof. Fernando Ramos – a report about Portuguese didactic videos database for primary school and secondary school. Important comments about webinars were made by prof. Filipe Carrera, experienced in webinars.
- Contributing to the IRNet blog – “To be a ‘blended’ b-teacher in the 21<sup>st</sup> century – reflections” – available at <http://areis-en-bteacher.blogspot.pt/>; preparing English and Russian subtitles for more than 20 didactic videos; our group, in addition, prepared the video about formative assessment.

The following workshops took place:

- 19 January 2016 – Project workshop “Multimedia Storytelling.” Prof. Antonio dos Reis conducted the workshop, showing the main ideas of multimedia storytelling. Researchers from BGKU, DSTU, Ukraine, and HSPU, Russia worked out a sample multimedia story to understand the main technology and approach.
- 19 January 2016 – Project seminar and workshop conducted by prof. Nataliia Morze with participation researchers from BGKU, DSTU, Ukraine, and HSPU, Russia. It included discussing WP4 results and remaining outcomes (subtitles for didactic videos), debating on WP5 goals, and sharing experiences on the discussed aspects.
- 26 January 2016 – Project workshop “Software for making subtitles,” conducted by prof. Antonio dos Reis with participation of researchers from BGKU, DSTU, Ukraine, HSPU, Russia, and LU, Portugal. It included presentation of the “Subtitle Edit” software and exemplification of its use for making subtitles.

- 27 January 2016 – Project workshop on ICT tools of subtitle captioning for academic and didactic videos conducted by prof. Paulo Pinto, LU, Portugal and prof. Antonio dos Reis, the Graal Institute, Portugal. The software for automatic subtitle captions was presented. The BGKU team members could create and edit their own subtitle captions for the WP4 project report videos. A case was evoked through the workshop that the automatic and hands-on subtitle captions can be for different types of student training activities in narration, translation, text editing, and storytelling. The general principle of MOOC subtitle caption creation and use was discussed. Automatic subtitle captions are generally considered more preferable and efficient by MOOC creators.
  - 1 February 2016 – Project workshop “ICT tools in education, teacher skills,” including discussion with professors of the University of Evora concerning application of ICT in education, preparing for the seminar on 2 February 2016, and discussing the seminar agenda.
  - 2 February 2016 – Project Seminar “Are you prepared to be a teacher in the 21<sup>st</sup> century?”
  - 4 February 2016 – Project workshop “Digital and traditional didactic tools in education and Robotic in elementary school” during the visit of the Evora University and elementary school. It is one of the oldest universities in Portugal. The particular interest is that the university combines historical traditions and innovative technologies. Activities included: visiting the historic university halls, taking part in the discussion with the university staff about the use of ICT, e-learning in their educational programmes.
- 2) Secondment of HSPU to UT (March–April 2016) – has been implemented in LU, Portugal in January–February 2016 instead of UT (March–April 2016)
  - 3) Secondment of US, UEX, UKF, UT to HSPU (March–April–May 2016)

The transfer of knowledge activities during the secondment was focused on the development of the verified in empirical research e-learning MOOC course “ICT-tools for e-learning,” improving efficiency of the educational process-oriented development of ICT and e-learning competencies, and other components of the system such as content, means, methods, forms of teaching, and so on. What was analysed were the theoretical-methodological bases of effective use of the ICT and remote forms of teaching in education in higher pedagogical educational institutions: pedagogical theories (such as behaviourism, constructivism, connectivism, constructionism, programming teaching), methods, organisational forms, means, contents, and taxonomy. The curriculum of an international MA course “E-learning in cultural diversity” was developed.

The following workshops took place:

- 6 April 2016 – workshop on 3D technology, conducted by dr Martin Cápav from UKF, Nitra, Slovakia, with participating of the IRNet researchers prof. Tatiana Noskova, prof. Tatiana Pavlova, and dr Olga Yakovleva from HSPU, RU, Slovak researchers from UKF dr Martin Drlík, dr Martin Cápav, dr Julia

Tomanová, dr Peter Švec, and prof. Eugenia Smyrnova-Trybulska from the University of Silesia, Poland.

- 6 April 2016 – participation in the workshop on robotics in education, conducted by graduates of an MA course presenting their diploma projects, HSPU, SPb, Russia.
- 11 April 2016 – IRNet meeting, workshop, and seminar on WP5 with participation of prof. Tatiana Noskova, prof. Tatiana Pavlova, and dr Olga Yakovleva, Slovak researchers from UKF dr Martin Drlík, dr Martin Cápaj, dr Julia Tomanová, dr Peter Švec, conducted by prof. Eugenia Smyrnova-Trybulska from the University of Silesia, Poland.
- 13 April 2016 – international conference *New Educational Strategies in the Contemporary Information Environment: E-learning Methodology*. Events included: a plenary session, a thematic conference session, round table debates, and workshops. A lecture “Selected Aspects of Effective Use of Didactic Videos and MOOCs in Education” was delivered by prof. Eugenia Smyrnova-Trybulska from the University of Silesia.
- 18 April 2016 – IRNet seminar and workshop, conducted by prof. Eugenia Smyrnova-Trybulska from the University of Silesia, Poland, on IRNet research results WP2, WP3, and WP4 with participation of prof. Tatiana Noskova, prof. Tatiana Pavlova, and dr Olga Yakovleva from HSPU, Slovak partners from UKF: dr Martin Drlík, dr Martin Cápaj, dr Julia Tomanová, dr Peter Švec, and researchers from the University of Potsdam, Germany, dr Rainer Herbst and dr Jan Knut.
- 18 April 2016 – workshop of master degree students within a framework of UNESCO master degree module “Social media and new educational practices.” During the seminar master degree students presented their projects in social media. The seminar was participated by prof. Tatiana Noskova, prof. Tatiana Pavlova, and dr Olga Yakovleva, dr Martin Drlík, dr Martin Cápaj, dr Julia Tomanová, dr Peter Švec, prof. Eugenia Smyrnova-Trybulska, and prof. Rafael Martin Espada and prof. Juan Arias from the University of Extremadura, Spain.
- 19 April 2016 – meeting with students, giving a presentation about the IRNet project and use of ICT and e-learning in partner universities by prof. Rafael Martin Espada, prof. Eugenia Smyrnova-Trybulska, dr Rainer Herbst, and dr Jan Knut.

There were also round table debates and presentation of reports by colleagues from the University of Potsdam, Germany. Topics were:

- computer modelling as a basis of the virtual particles and objects of microscopic size;
- visualisation of scientific data in the form of three-dimensional topologies; and
- three-dimensional printing, three-dimensional visualisation of the training materials and models for lectures and seminars at the University of Potsdam.

4) Secondment of US, OU to BGKU (April 2016)

The transfer of knowledge activities during the secondment was focused on analysing and studying the use of ICT in development of the intercultural competence.

The following workshops took place:

- 21 April 2016 – workshop “Intercultural competence – general information” 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, researchers from OU, the Czech Republic.
- 26 April 2016 – workshop “Relations between teacher and culturally different learner” 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, researchers from OU, the Czech Republic.
- 29 April 2016 – workshop “Work with learner with special educational needs” 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, researchers from OU, the Czech Republic.

#### 5) Secondment of DSTU, BGKU, HSPU to UKF (April–May 2016)

The transfer of knowledge activities during this secondment was focused on development of a computer-oriented methodical and theoretical scientific system of contemporary specialists training (the future and in-service teachers, leadership, etc.), the use of ICT and remote forms of teaching in science, and their future professional activity. These issues were discussed during formal and informal meetings during the DIVAI conference with prof. Eugenia Smyrnova-Trybulska and all coordinators (Nataliia Morze, Martin Drlík, Tatiana Noskova) and researchers from HSPU, DSTU, UKF, and BGKU.

According to the roadmap developed by the coordinating university (BGKU), the computer-oriented methodological and theoretical scientific system for training contemporary specialists will be developed partly in the format of MOOC and in the Moodle environment; it will contain the following components:

- introduction; expected results and outcomes;
- e-learning in higher education; comparison of traditional and innovative methods and technologies; 21<sup>st</sup> century skills and e-learning; the system of ICT tools for developing skills and 21<sup>st</sup> century implementing e-learning in modern universities and institutes of teacher training; taking into account learning styles;
- tools for adaptive learning; learning styles;
- tools for presentation of content;
- tools for making didactic videos;
- tools for mind maps and infographics knowledge;

- the systems of distance learning;
- tools for communication and collaboration;
- tools for formative assessment and control; and
- storytelling.

The responsibility of the IRNet team was to work on tools for mind maps and infographics knowledge; in order to perform this task researchers from DSTU started the review of tools presented online and consulted Jane Hart's list to check the actual interest of learning community in separate tools for systematic knowledge representation. The results of the research into these tools will become a part of an e-learning course and will be presented at the upcoming conferences, scheduled within the project agenda.

#### Workshops:

- May 2016 – during a series of meetings and workshops the main question of developing a MOOC and a course in LMS Moodle as one of the core results of WP5 was discussed. Together with the coordinator of WP5, prof. Natalia Morze, the main outline of the MOOC course was worked out, and the questionnaire for teachers and students about their outlook on MOOCs was developed.
- 6 May 2016 – IRNet meeting and workshop on mobile technologies in education, conducted by dr Martin Drlík, dr Martin Cápaj, dr Peter Švec, dr Julia Tomanová with participation of IRNet researchers from Ukraine, Russia, and Poland, including a presentation of students' projects and a seminar with students of UKF. Students presented their research on programming, augmented reality implementation, and development of computer games for school practice.
- 6 May 2016 – workshop during the visit of the Samsung mobile classroom with the presentation of several examples of its use, conducted by the coordinator of the Samsung mobile laboratory with participation of IRNet researchers from Ukraine, Russia, and Poland.
- 16–18 May 2016 – international workshop “New opportunities in European projects.” The main issues discussed were: actual calls under the H2020 programme; the position of Ukraine in EC projects and the possibilities of cooperation in future projects; the position of Russian Federation in EC projects and the possibilities of cooperation in future projects; the development of techniques and technology for increasing of educational and research system; ICT Proposal Day – presentation of experiences, future direction of the use of IT in H2020 programmes; new educational strategies in contemporary digital environment; meeting with prof. Libor Vozar, Dean of the Faculty of Natural Sciences, UKF, Nitra; challenges and prospects in the development of an e-learning system for IT students; how technology and the Internet have accelerated the pace of language change; intercultural competence within the system of higher school teaching; the role of new technologies in the learning process; psychological support of e-learning and distance learning in



technically oriented study programmes; enhancing the quality of administration, teaching, and testing of computer science using a learning management system; challenges and prospects in the development of an e-learning system for IT students; draft proposals for IRSES programmes; enhancing the cooperation in Erasmus+ and Visegrad programmes.

- 19 May 2016 – seminar and workshop in UKF. The following questions were discussed: the organisational forms, models, distance learning and remote types of courses (hybrid (combined)), case-technologies, social media, selected Web 2.0 and Web 3.0. Massive Open Online Courses, virtual classroom, Internet courses, and selected IT tools such as LMS (Learning Management Systems), CMS (Contents Management Systems), VSCR (Virtual synchronous classrooms), SSA (Screen Share Applications), CSA (Contents Sharing Application), cloud computing environment, virtual campus, virtual learning environment and “virtual synchronous classroom” tested during WP4.
- 25 May 2016 – workshop, discussion, and seminar during the visit of a primary school with the programme for talented children with participation IRNet researchers from Ukraine, Russia, and Slovakia.

6) Secondment of US, OU, LU to BGKU (August–September 2016)

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

- analysis of results of the survey for students, future teachers, conducted at the University of Silesia on MOOC, BGKU, other partner institutions, and comparison of results;
- improvement of the MOOC methodology and its implementation;
- preparation of the components of the MOOC “ICT-tools in e-learning”;
- development of theoretical-methodological, psychological, pedagogical, and methodological foundations of distance learning science based on Internet technologies;
- presentation of research results during the international scientific conference *Open Educational E-environment of the Modern University, (The skills of scientific communication among faculty using repositories, wiki technology, e-libraries)* held on 9<sup>th</sup> September 2016 at the Borys Grinchenko Kyiv University (BGKU) (Ukraine).

Workshops:

- 29 August 2016 – workshop, conducted by Director of the library of BGKU, on digitalisation of the hard versions of books using contemporary electrical equipment.
- 9 September 2016 – workshop “STEM-education: a need or a whim,” moderated by Anastasiia Tiutiunyk, within a framework of *Open Educational E-environment of the Modern University*.
- 9 September 2016 – workshop “3D scanner – use in education,” moderated by Liliia Varchenko-Trotsenko, within a framework of *Open Educational E-environment of the Modern University*.

- 12 September 2016 – Project meeting, seminar, and workshop in presence and in remote mode on WP6 Methodology with participation of prof. Eugenia Smyrnova-Trybulska, prof. Ewa Ogrodzka-Mazur, prof. Anna Szafrńska-Gajdzica, prof. Barbara Grabowska, dr Łukasz Kwadrans, prof. Paulo Pinto, Prof. Josef Malach, dr Ingrid Nagyova, dr Tatiana Prextova, prof. Nataliia Morze, prof. Rusudan Makhachashwili, and dr Hanna Pavlova, BGKU, UA.

#### 7) Secondment of UEx to HSPU (September 2016)

The transfer of knowledge activities during the secondment was focused on summarising the implementation of all aims and tasks of WP5, elaborating the content for the MOOC “ICT tools for e-learning” (module “Digital Story Telling”), and presenting research results and experience concerning pedagogical and technological aspects of using virtual classrooms.

Workshops:

- 27 September 2016 – workshop entitled “The international educational network programs in HSPU” with participation of professors of the University of Extremadura (Spain): prof. Sixto Cubo Delgado, prof. Prudencia Gutiérrez Esteban, prof. Enrique Iglesias Verdegay, prof. Gemma Delicado Puerto, prof. Rafael Martín Espada, prof. Rocio Yuste Tosina, and of professors of Herzen State Pedagogical University, St. Petersburg (Russia): prof. Tatiana Noskova, prof. Tatyana Pavlova, prof. Olga V. Yakovleva.
- 13 September 2016 – IRNet seminar and workshop in Educational-Computing Laboratory of Network Technologies with participation of the Spanish and Russian IRNet researchers.
- 21 September 2016 – IRNet seminar and workshop within a framework of UNESCO Master degree module “Social media and new educational practices” with participation of the Spanish and Russian IRNet researchers, and HSPU students. Lectures were given by prof. Rafael Martín Espada, prof. Enrique Iglesias Verdegay, prof. Rocio Yuste Tosina, prof. Gemma Delicado Puerto, prof. Sixto Cubo Delgado, and prof. Prudencia Gutiérrez Esteban. Lectures’ content was as follows:
  - presentation on the University of Extremadura;
  - presentation on the Department of Educational Sciences;
  - lecture: New educational practices: Virtual synchronous classrooms;
  - lecture: New educational practices: Blended learning in education;
  - lecture: How to use our Personal Learning Environment for teaching and learning?
- 22 September 2016 – virtual meeting and workshop in Adobe Connect with prof. Paulo Pinto to work on the “Digital Story Telling” MOOC module. Coordination and follow-up were provided by IRNet agenda meeting.
- 26 September 2016 – videoconference and workshop on pedagogical and technological aspects of using virtual classrooms for Project participants, conducted by UEx team (Spain).

## Theoretical and Methodological Bases

Pedagogical theories included are: behaviourism, constructivism, connectivism, constructionism, programming teaching, and other.

The methods used are:

- general environment of theories and methodologies of online teaching and learning;
- self-learning approaches and techniques;
- learning styles and teaching process;
- objectives and teaching taxonomies;
- teaching and learning methods (methods of the project, wiki, WebQuest; programming learning and teaching; discussion on the course forum, use of social media);
- teaching and learning models;
- methodology and techniques of e-learning;
- methodology of producing e-contents; and
- evaluating of the teachers’ skills necessary to work in an ICT environment.

Organisational forms are:

- online learning;
- e-learning;
- MOOCs;
- blended learning;
- distance learning; and
- face-to-face (no more than 50%) (MA courses international (or native)).

Additional contents are:

- teaching Models and forms;
- pedagogic management of the project;
- planning and coordination of courses;
- personal and institutional ICT plans; and
- other.

The means are:

- electronical:
  - ICT applications, educational computer programmes, multimedia, didactic videos, Internet resources, web services (YouTube, Wikipedia, Wiki portals, social media, etc.), component (activity) LCMS systems (Moodle), others;
- partly traditional:
  - books, textbooks, exercise books, printed teaching materials, journals, conference proceedings, monographs, others;
- technologies:
  - LMS system Moodle, other LMS;
  - ICT tools used in MOOC;

- eDex system; and
- Web 2.0 and Web 3.0 technologies.

Taxonomies used are as follows:

- Bloom's Taxonomy;
- Marzano's Taxonomy;
- Dave's Taxonomy; and
- Niemierko's Taxonomy.

Levels of knowledge are described on the example of LMS systems. Knowledge and skills for creation and design of a full distance learning course are:

- **remembering**: can the student recall or remember the information? (define, duplicate, list, memorise, recall, repeat, reproduce, state)
  - defining the Learning Management System
  - presenting the list of well-known LMS system
- **understanding**: can the student explain ideas or concepts? (classify, describe, discuss, explain, identify, locate, recognise, report, select, translate, paraphrase)
  - classifying the LMS systems
  - identifying the activities of the Learning Management System
- **applying**: can the student use the information in a new way? (choose, demonstrate, dramatise, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write)
  - choosing the most popular and multifunctional LMS system
  - illustrating the activities, supported by LMS Moodle
- **analysing**: can the student distinguish between the different parts? (appraise, compare, contrast, criticise, differentiate, discriminate, distinguish, examine, experiment, question, test)
  - comparing the LMS systems according to some criteria
  - differentiating the resources and activities supported with different educational activities
- **evaluating**: can the student justify a stand or decision? (appraise, argue, defend, judge, select, support, value, evaluate)
  - defending own position concerning a more adequate LMS system
  - evaluating and assessing a DL course according some criteria
- **creating**: can the student create a new product or point of view? (assemble, construct, create, design, develop, formulate, write)

### **The ADDIE Model – WP5 Groundwork Methodological Framework**

The ADDIE model is a framework that lists generic processes that instructional designers and training developers use. It represents a descriptive guideline for building effective training and performance support tools in five phases: analysis, design, development, implementation, and evaluation.

### **The analysis phase**

In the analysis phase, the instructional problem is clarified, the instructional goals and objectives are established, and the learning environment and the learner’s existing knowledge and skills are identified. Below are some of the questions that are addressed during the analysis phase:

- Who is the audience and their characteristics?
- Can the new behavioral outcome be identified?
- What types of learning constraints exist?
- What are the delivery options?
- What are the online pedagogical considerations?
- What is the timeline for project completion?

There have been elaborated:

- the profile entrance for choosing tools for studying;
- the survey entrance for hotel module (on collaboration);
- an example for the evaluation of satisfaction with course materials; and
- an example for the evaluation of the course material students (on the cooperation material).

### **The design phase**

The design phase deals with learning objectives, assessment instruments, exercises, content, subject matter analysis, lesson planning, and media selection. The design phase should be systematic and specific. Systematic means a logical, orderly method of identifying, developing, and evaluating a set of planned strategies targeted for attaining the project’s goals. Specific means that each element of the instructional design plan needs to be executed with attention to details.

There have been elaborated:

- an example of goals (in cooperation);
- learning outcomes for the module (cooperation);
- schedule of assessment (for example the cooperation of the module);
- the model used in the exercises to practice skills in one module; and
- an example of a training session based on the use of the module materials – blended learning.

These are steps used for the design phase:

- documentation of the project’s instructional, visual, and technical design strategy;
- applying instructional strategies according to the intended behavioral outcomes by domain (cognitive, affective, psychomotor);
- creating storyboards;
- designing the user interface and user experience;
- prototype creation; and
- applying visual design (graphic design).

**The development phase**

The development phase is where the developers create and assemble the content assets that were created in the design phase. Programmers work to develop and/or integrate technologies. Testers perform debugging procedures. The project is reviewed and revised according to any feedback given.

**The implementation phase**

During the implementation phase, a procedure for training the facilitators and the learners is developed. The facilitators' training should cover the course curriculum, learning outcomes, method of delivery, and testing procedures. Preparation of the learners include training them on new tools (software or hardware) and student registration. This is also the phase where the project manager ensures that the books, hands on equipment, tools, CD-ROMs, and software are in place, and that the learning application or Web site is functional.

**The evaluation phase**

The evaluation phase consists of two parts: formative and summative. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation consists of tests designed for domain specific criterion-related referenced items and providing opportunities for feedback from the users.

**Quality Assurance in E-learning Premises**

Grifoll et al. (2010) identify the following principles:

- 1) "The first basic principle declares that providers of higher education have the primary responsibility for the quality of their provision and its assurance. This is a principle that should be developed and implemented in a deeper way. However, e-learning programmes are progressively enrolling students and hiring teachers situated in different countries. Facing this situation, how do we match the primary responsibility with the needed 'secondary' responsibility of QA agencies and other stakeholders? How will international e-learning programmes be externally assessed?"
- 2) "The second basic principle of the ESG states that the interests of society in the quality and standards of higher education need to be safeguarded; the concept of society here, and taking into account again the possibilities of e-learning programmes to be delivered worldwide, needs also deep reflection. Who represents the society? That is important if we wish to include the voice of society in the quality of study programmes, and in the definition of new proposals" (p. 9).
- 3) Flipped class methods are implemented.
- 4) The ECB-checklist method is employed to assess the open e-course, created to implement the IRNet project groundwork findings.

## Dissemination of Results (Conferences, Publications)

From the very beginning of the project, the partnership used various dissemination tools to better exploit and improve the project objectives, results, and the transfer of knowledge. National and international conferences as well as publications constituted an important opportunity to share the project initial results and achievements with experts in the field. However, the dissemination of the results obtained within a framework of the project work was also a subject of many other activities, meetings, workshops, and presentations during visits in the host organisations.

### Conferences

The partnership of the network organised and hosted 5 important conferences in line with the project objectives. All of these events were attended not only by the network researchers, but also by external participants.

- 1) 2 February 2016 – international scientific seminar, workshop, and e-round table debate: *Preparing to be a blended teacher in the 21<sup>st</sup> century*, the Lusíada Lisbon University, Portugal, with participation of nearly 35 participants from different countries.
- 2) 13 April 2016 – International Scientific Conference *New Educational Strategies in the Contemporary Information Environment: E-learning Methodology* organised by HSPU, SPB, Russia. There were more than 40 participants from different countries: Spain, Poland, Russia, Slovakia, Australia, and other. Activities included participation in a plenary session, a thematic conference session, round table debates. A lecture “Selected Aspects of Effective Use of Didactic Videos and MOOCs in Education” was presented by prof. Eugenia Smyrnova-Trybulska from the University of Silesia in Katowice. The conference was followed by the publication of *New Educational Strategies in Modern Information Space. E-Learning Methodology Proceedings* (Scientific papers). Saint-Petersburg: HSPU, including the best articles, elaborated by conference participants, in particular 4 IRNet papers with some project results.
- 3) 2–4 May 2016 – International Scientific Conference *DIVAI 2016* (Distance Learning in Applied Informatics), UKF (Slovakia) with participation of more than 80 participants from different countries. A book was published: Turčáni, M., Balogh, Z., Munk, M., & Benko, L. (Eds.). (2016). *Proceedings from DIVAI 2016 – Distance Learning in Applied Informatics. 11<sup>th</sup> International Scientific Conference on Distance Learning in Applied Informatics, 2–4 May 2016*. Constantine the Philosopher University in Nitra, Faculty of Natural Sciences, Department of Informatics. Nitra: Wolters Kluwer, including the best articles, elaborated by conference participants, in particular 5 IRNet papers with project results.

- 4) 9 September 2016 – *Open Educational E-environment of the Modern University (The skills of scientific communication among faculty using repositories, wiki technology, e-libraries)* (<http://openedu.kubg.edu.ua/>) held at the Borys Grinchenko Kyiv University (BGKU) (Ukraine). Conference objectives were: trends and strategies of the open educational resources development, formation of the university's open educational e-environment as a factor of increasing the quality of education, problems and prospects of interaction of the subjects in the open educational environment in the process of professional training, blended and distance learning as a way of access to quality education, and lifelong learning – the process and the motivation to use open educational resources. A book was published: Morze, N. (Ed.). (2016). *Open educational e-environment of modern university (2)*. Kiev: Borys Grinchenko Kiev University. Retrieved from <http://openedu.kubg.edu.ua/journal/index.php/openedu/issue/view/2/showToc#.V-y1IDUudZc>, including the best articles, elaborated by conference participants, in particular 10 IRNet papers with project results.

## Publications

More than 50 papers were published and submitted by members of the network in the period concerned; near 70% of those papers involve researchers from at least two different participating organisations (EU and third countries). All publications are the outcome of networked research and a result of an active exchange programme. *International Journal of Research in E-learning*, 1(1), 2015, which started within a framework of the IRNet Project, and *Open Educational E-environment of Modern University*, 2, 2016, were published.

### A List of IRNet-related Publications

- 1) Smyrnova-Trybulska, E. (2016). Some aspects of increasing the effectiveness and comfort of the scientific and educational process in university electronic environment – A research report. *The New Educational Review*, 45, 259–272. Retrieved from <http://www.educationalrev.us.edu.pl/issues/volume-452016/>.
- 2) 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.
- 3) Smyrnova-Trybulska, E., Kommers, P., Morze, N., Noskova, T., Pavlova, T., & Yakovleva, O. (2016). Międzynarodowa sieć naukowa IRNet w dobie nowych technologii, globalizacji i internacjonalizacji edukacji oraz kompetencji kluczowych – wstępny raport z implementacji projektu. *EduAkcja. Magazyn edukacji elektronicznej*, 2(12), 130–138.
- 4) Smyrnova-Trybulska, E. & Morze, N. (2016). From programmed teaching to constructivism and personally-oriented approach to e-learning. *EduAkcja. Magazyn edukacji elektronicznej*, 2(12), 15–28.
- 5) Smyrnova-Trybulska, E., Noskova, T., Pavlova, T., Yakovleva, O., & Morze, N. (2016). New educational strategies in contemporary digital environment.



- International Journal of Continuing Engineering Education and Lifelong Learning*, 26(1), 5–24. Retrieved from <http://www.inderscience.com/info/inarticletoc.php?jcode=ijceell&year=2016&vol=26&issue=1>.
- 6) Noskova, T., Pavlova, T., Yakovleva, O., Smyrnova-Trybulska, E., & Morze, N. (2016). Modern education quality requirements and information technologies in academic teachers’ activities. *International Journal of Continuing Engineering Education and Lifelong Learning*, 26(4), 434–459.
  - 7) Noskova, T., Pavlova, T., Yakovleva, O., Morze, N., & Drlík, M. (2016). Quality features of university information environment in its external indicators. *International Journal of Continuing Engineering Education and Lifelong Learning*, 26(2), 196–216.
  - 8) Smyrnova-Trybulska, E., Kommers, P., & Simmerling, M. (2016). Editorial. *International Journal of Continuing Engineering Education and Lifelong Learning*, 26(1). Retrieved from <http://www.inderscience.com/info/inarticletoc.php?jcode=ijceell&year=2016&vol=26&issue=1>.
  - 9) Smyrnova-Trybulska, E., Kommers, P., & Simmerling, M. (2016). Editorial. *International Journal of Continuing Engineering Education and Lifelong Learning*, 26(2). Retrieved from <http://www.inderscience.com/info/inarticletoc.php?jcode=ijceell&year=2016&vol=26&issue=2>.
  - 10) Smyrnova-Trybulska, E. (2015). Editorial. *International Journal of Research in E-learning*, 1(1), 5–8.
  - 11) Smyrnova-Trybulska, E., Ogrodzka-Mazur, E., Szafrńska-Gajdzica, A., Dóluk, E., Kommers, P., Morze, N., Noskova, T., Pavlova, T., Yakovleva, O., Pinto, P., Arias Masa, J., Cubo Delgado, S., Delicado Puerto, G., Drlík, M., Malach, J., Issa, T., & Romanyukha, M. (2015). Report on the implementation of WorkPackage 2 “Analyses of legal, ethical, human, technical and social factors of ICT and e-learning development and intercultural competences state in every partner country” in the framework of the IRNet project. *International Journal of Research in E-learning*, 1(1), 99–116.
  - 12) Smyrnova-Trybulska, E., Ogrodzka-Mazur, E., Szafrńska-Gajdzica, A., Morze, N., Makhachashvili, R., Drlík, M., Cápav, M., Tomanová, J., Švec, P., Issa, Tomayess, Issa, Theodora, Romanyukha, M., Nakazny, M., & Sorokina, L. (2015). Discussion paper on more adequate and effective IT tools. Some previous results concerning more adequate and effective IT tools in the category: Tools for making presentations. *International Journal of Research in E-learning*, 1(1), 77–96.
  - 13) Morze, N. & Buynytska, O. (2015). Open e-environment – The key instrument of the education quality. *International Journal of Research in E-learning*, 1(1), 27–46.
  - 14) Nakaznyi, M., Sorokina, L., & Romaniukha, M. (2015). ICT in higher education teaching: Advantages, problems, and motives. *International Journal of Research in E-learning*, 1(1), 49–61.

- 15) Kalamarz, R. (2015). Assessment in VLE supported foreign language learning. *International Journal of Research in E-learning*, 1(1), 62–74.
- 16) Noskova, T. N., Pavlova, T. B., Âkovleva, O. V., & Smyrnova-Trybulska, E. (2016). Информатизация образовательной среды современного факультета. Проблемы и перспективы. *Информатика и образование*, 9(278), 11–17.
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### **Raport z wdrożenia Pakietu Roboczego WP5 „Rozwój metodologii pilotażowej” w ramach projektu IRNet**

#### Streszczenie

Niniejszy artykuł opracowany przez międzynarodowy zespół autorów – badaczy z różnych dziedzin naukowych związanych z ICT, e-learningiem, pedagogiką i innymi powiązanymi z nimi dziedzinami – koncentruje się na celach i niektórych wynikach międzynarodowego projektu IRNet. W szczególności artykuł ten opisuje narzędzia badawcze, metody i pewne procedury Pakietu Roboczego 5 (WP5) „Rozwój metodologii pilotażowej”: cele, zadania, rezultaty i realizację podróży badawczych. Badacze z partnerskich uniwersytetów przeprowadzili analizę wyników WP5 w kontekście kolejnych etapów i pakietów roboczych IRNet – Międzynarodowej Sieci Badawczej.

**Słowa kluczowe:** Międzynarodowa Sieć Badawcza IRNet, ICT, e-learning, kompetencje międzykulturowe, metodologia



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### **Отчет ходе выполнения рабочего пакета WP5 «Разработка экспериментальной методологии» в рамках проекта IRNet**

#### **А н о т а ц и я**

В данной статье, подготовленной международной группой авторов, исследователей из разных научных областей, связанных с ИКТ, электронным обучением, педагогикой и другими смежными областями, основное внимание уделяется целям и некоторым результатам международного проекта IRNet. В частности, в этой статье описываются инструменты исследования, методы и некоторые процедуры исследования в рамках рабочего пакета 5 (далее: WP5) «Разработка экспериментальной методологии»: цели, задачи, ожидаемые результаты, выполнение научно-исследовательских поездок. Исследователи из университетов-партнеров, проанализировали результаты WP5 в контексте следующих этапов и пакетов работы проекта IRNet – Международной научно-исследовательской сети.

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

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### **Informe sobre la implementación del Work Package 5 “Desarrollo de metodologías piloto” en el marco del Proyecto IRNet**

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

Este artículo, elaborado por un equipo internacional de investigadores de diferentes áreas científicas, vinculados con TIC, e-learning, pedagogía y otras disciplinas afines, se centra en los objetivos y resultados obtenidos en el proyecto internacional IRNet. En particular, el artículo describe las herramientas de investigación, los métodos y algunos procedimientos del Work Package 5 (en adelante: WP5) “Desarrollo de metodologías piloto”, esto es, objetivos, tareas, productos e implementación de viajes de investigación, en el contexto de las siguientes fases y Work Packages del Proyecto IRNET-International Research Network.

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