INTRODUCTION

The theme of the conference is: *"Innovative Educational Technologies, Tools and Methods for E-learning"*.

The monograph ***"Innovative Educational Technologies, Tools and Methods for E-learning"*** includes articles based on the best papers prepared and presented by authors from nine European countries and from more than twenty universities during the scientific conference entitled "Theoretical and Practical Aspects of Distance Learning", subtitled: ***"Innovative Educational Technologies, Tools and Methods for E-learning"***, which was held on 12–13 October 2020, organized by the Faculty of Arts and Sciences of Education in Cieszyn, the Faculty of Social Sciences, the Institute of Pedagogy, Faculty of Science and Technology, the Institute of Computer Science, University of Silesia in Katowice, Poland. Co-organizers and Partners: University of Ostrava (UO), Czech Republic, Silesian University in Opava (SU), Czech Republic, Constantine the Philosopher University in Nitra (UKF) Slovakia, University of Extremadura (UEx), Spain, University of Twente (UT), The Netherlands, Lisbon Lucíada University (LU), Portugal, Curtin University in Perth (CU), Australia, Borys Grinchenko Kyiv University (BGKU), Ukraine, Herzen State Pedagogical University of Russia, St.Petersburg (HSPU), Russian Federation, Dniprovsk State Technical University (DSTU), Ukraine, IADIS – International Association for Development, of the Information Society, a non-profit association, Polish Pedagogical Society, Branch in Cieszyn, Polish Scientific Society for Internet Education, Association of Academic E-learning, Poland.

Experts on STEM and robotics in education from 10 countries, in particular Australia, Bulgaria, Czechia, the Netherlands, Poland, Portugal, Slovakia, Ukraine, Russia, Turkey, reflect about Innovative Educational Technologies, Tools and Methods for E-learning, presented research results, contemporary trends and scientific an educational project devoted MOOCs, Artificial intelligence (AI), augmented reality (AR), virtual reality (VR), Selected Web 2.0 and Web 3.0 technology, LMS, CMS, STEM, mobile learning other topics.

The speakers from the Universidade Lusiada de Lisboa (Portugal), the Comenius University in Bratislava (Slovakia), Plovdiv University "Paisii Hilendarski" (Bulgaria), Borys Grinchenko Kyiv University (Ukraine), Gdańsk Technical University (Poland), Herzen State Pedagogical University of Russia, St. Petersburg (Russia), Jagiellonian University (Poland), Warsaw University (Poland), Silesian University in Opava (Czech Republic), University of Silesia in Katowice (Poland), Lisbone Lusiada University, Lisbone (Portugal), K.D. Ushynskyi South Ukrainian National Pedagogic-

al University (Ukraine), Mykhailo Drahomanov National Pedagogical University, Kyiv, (Ukraine), Dniprovsk State Technical University (Ukraine), University of Ostrava (Czech Republic), Pedagogical University of Krakow (Poland), University of Social Sciences and Humanities in Warsaw (Poland), Instituto Superior de Tecnologias Avançads (Portugal), Makarenko Sumy State Pedagogical University (Ukraine), Ternopil University (Ukraine), Kherson State University (Ukraine), Izmail State University of Humanities (Ukraine), and other educational institutions delivered lectures providing insights into interesting studies, presented their recent research results and discussed their further scientific work.

The authors include experts, well-known scholars, young researchers, highly trained academic lecturers with long experience in the field of e-learning, PhD students, distance course developers, authors of multimedia teaching materials, designers of websites and educational sites.

I am convinced that this monograph will be an interesting and valuable publication, describing the theoretical, methodological and practical issues in the field of E-learning in STEM education offering proposals of solutions to certain important problems and showing the road to further work in this field, allowing exchange of experiences of scholars from various universities from many European countries and other countries of the world.

This book includes a sequence of responses to numerous questions that have not been answered yet. The papers of the authors included in the monograph are an attempt at providing such answers. The aspects and problems discussed in the materials include the following:

The conference topics include the following thematic sections:

1. Innovative Educational Technologies, Tools and Methods for E-learning

- Educational technologies for e-learning
- Modern ICT tools for e-learning – review, implementation, opportunities for effectiveness learning and teaching
- Innovative methods for e-learning – theoretical and practical aspects of using
- MOOCs – methodology of design, conducting, implementation and evaluation
- Artificial intelligence (AI), augmented reality (AR), virtual reality (VR)
- Selected Web 2.0 and Web 3.0 technology
- LMS, CMS, VSCR, SSA, CSA
- Cloud computing environment, social media, multimedia resources, (video) tutorial design
- Simulations, models in e-learning and distance learning
- Networking, distance learning systems
- M-learning

2. E-learning and Internationalisation in Higher Education. E-environment and Cyberspace

- Contemporary trends in world education – globalization,
- internationalization, mobility

- Legal, social, human, scientific, technical aspects of distance learning and e-learning in different countries
- European and national standards of e-learning quality evaluation
- Psychological and ethical aspects of distance learning and e-learning in different
- Collaborative learning in e-learning
- E-environment of the university
- SMART universities. SMART technology in education
- E-learning in a sustainable society
- Comparative approach

3. E-learning and STEM Education

- Robots and Coding in education
- Immersive learning environments. Blockchain. Bots
- Internet of things. 3D printing
- STEM education contemporary trends and challenges
- Successful examples of e-learning
- Distance learning in humanities and science
- Quality of teaching, training
- Evaluation of synchronous and asynchronous teaching and learning, methodology and good examples

4. Development of Key and Soft Competences and E-learning

- Effective development of teachers' digital skills
- Key competences and soft skills in the digital society
- Use of e-learning in improving the level of students' digital competences
- E-learning for humanities
- E-learning for science and technologies
- E-Learning and Lifelong Learning
- Self-learning based on Internet technology

Publishing this monograph is a good example of expanding and strengthening international cooperation. I am very grateful for valuable remarks and suggestions which contributed to the quality of the publication. Here I especially want to thank Dr Mariusz Marczak for his assistance in proofreading and editing this publication. Also, I would like to say 'thank you' to the authors for the preparation and permission to publish their articles. I wish all readers a pleasant read. Thank you.

Eugenia Smyrnova-Trybulska