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A Report from the International Scientific Conference “Theoretical and Practical Aspects of Distance learning” DLCC2024 (www.dlcc.us.edu.pl) subtitled: “E-learning & Enhancing Soft Skills” which was held at the University of Silesia, Cieszyn, Poland. Monday 14th and Tuesday 15th October 2024

The 16th edition of the International Scientific Conference, “Theoretical and Practical Aspects of Distance learning” DLCC2024 (www.dlcc.us.edu.pl) was held under the theme “E-learning & Enhancing Soft Skills” on October 14th and 15th, 2024, at the University of Silesia in Cieszyn. It was organised by the Faculty of Arts and Educational Sciences in Cieszyn, the Faculty of Computer Science and Materials Sciences in Sosnowiec and the University of Silesia in Katowice (Poland).

The Conference was organized under the auspices of Rector of the University of Silesia in Katowice – Prof. dr hab. Ryszard Koziołek, Dean of the Faculty of Arts and Sciences of Education – Prof. dr hab. Katarzyna Marcol, Dean of the Faculty of Social Sciences – Prof. dr hab. Małgorzata Myśliwiec, Director of the Institute of Pedagogy – Prof. dr hab. Irena Polewczyk, Dean of the Faculty of Science and Technology – Prof. dr hab. Seweryn Kowalski, Director of the Institute of Computer Science – Prof. dr hab. inż. Rafał Doroz. The co-organisers were the 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 Lusiada University (LU), Portugal, Curtin University in Perth

(CU), Australia, Borys Grinchenko Kyiv University (BGKU), Ukraine, 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.

The International Scientific Conference “Theoretical and Practical Aspects of Distance Learning” DLCC2024 is an important event within the field of education, particularly focused on distance learning and its practical applications. It is organized annually by prominent academic institutions, including the University of Silesia in Katowice, Poland, and co-organized with various international universities. This conference brings together scholars, experts, and educators from around the world to discuss advancements in distance education, e-learning, and technology-enhanced learning, which is critical as educational systems modernize worldwide .

Members of the International Programme Committee are experienced scientists, scholars, and researchers in the field of ITC and distance learning from many countries in Europe and worldwide. The Honorary Scientific Committee goes as follows:

- Prof. dr hab. Katarzyna Marcol, Dean of the Faculty of Arts and Educational Sciences, University of Silesia in Katowice, Poland
- Prof. dr hab. Małgorzata Myśliwiec, Dean of the Faculty of Social Sciences, University of Silesia in Katowice, Poland
- Prof. dr hab. Piet Kommers, Professor UNESCO, University of Twente, The Netherlands
- Doc. Ing. Katerina Kostolanyova, PhD, Vice-Dean of the Faculty of Pedagogy University of Ostrava, Czech Republic
- Prof. dr hab. Inż. Jan Kusiak, Head of E-Learning Centre, University of Science and Technology in Cracow (AGH), Poland
- Prof. dr hab. Natalia Morze, Vice-Rector of the Borys Grinchenko Kyiv University, Ukraine
- Professor Norbert Pachler, London University, United Kingdom
- Prof. dr hab. Irena Polewczyk, Director of the Institute of Pedagogy, University of Silesia in Katowice, Poland
- Prof. dr hab. inż. Rafał Doroz, Director of the Institute of Computer Science, University of Silesia in Katowice, Poland
- Prof. dr hab. Seweryn Kowalski, Dean of the Faculty of Sciences and Technology, University of Silesia in Katowice, Poland
- Prof. dr hab. Maciej Tanaś, Dean of the Pedagogical Faculty, Maria Grzegorzewska Academy of Special Education, Poland
- Professor dr inż. Milan Turcani, Constantine the Philosopher University in Nitra, Slovakia
- Professor Pedro Veiga, Vice-rector of the Lisbon University, Portugal

The conference topics include the following thematic sections:

1. E-learning & Enhancing Soft Skills
 - Key competences and soft skills in the digital society
 - E-learning for humanities and social sciences
 - Self-learning based on e-learning and Internet technology
 - E-learning and online learning
 - Blended learning
 - Legal, social, human, scientific, and 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
 - E-collaboration and e-communication in e-learning
 - E-environment of the contemporary university
 - E-learning in a sustainable society. Ecosystem and green university
 - Comparative approach in research on e-learning
2. E-learning & enhancing key competences.
 - Methodology and Tools Development
 - Use of e-learning in improving the level of specialists and students' digital competences
 - Innovative educational technologies, tools and methods for e-learning
 - Modern ICT tools for e-learning in the time of COVID-19 and after pandemic – review, implementation, opportunities for effectiveness of learning and teaching
 - MOOCs – methodology of design, conducting, implementation and evaluation
 - Education 4.0 and Education 5.0
 - E-learning and effectiveness using Learning Management System (LMS), CMS, VSCR, SSA, CSA
 - Cloud computing environment, social media, multimedia resources
 - Methodological tools. E-tutoring. (Video)tutorial design
 - Simulations, models in e-learning and distance learning
 - Successful examples of M-learning, e-learning
 - Evaluation of synchronous and asynchronous teaching and learning, methodology and good examples
3. E-learning in the transformation of education in digital society: training of the specialists and LLL
 - Contemporary trends in world e-learning in conditions of globalization, internationalization, mobilities
 - Effective development of teachers' digital skills
 - E-learning and Lifelong Learning
 - E-environment and cyberspace security development of key and soft competences and e-learning
 - AI and cyberspace. Cybersecurity

- Networking, distance learning systems
- 4. E-learning & AI, STEAM Education
 - Artificial intelligence (AI), augmented reality (AR), virtual reality (VR)
 - SMART Universities. SMART Technology in education
 - AI in education: perspective and challenges
 - AI Apps: ChatGPT and beyond
 - Students and teacher competences in the area of AI
 - Ethical and social aspects of AI
 - Machine learning. Learning analytics.
 - Immersive learning environments. Blockchain. ChatBots
 - E-learning and STEAM Education
 - Robots and coding in education
 - Internet of things. 3D printing
 - STEM education contemporary trends and challenges
 - Distance learning in humanities and science
 - Quality of teaching, training in the area of e-learning
 - E-learning for science and technologies

Experts from many countries, such as Bulgaria, Czech Republic, Portugal, Poland, Slovakia, Taiwan, Turkey, United Kingdom, Ukraine, reflected on innovative educational technologies, tools and methods, particularly artificial intelligence (AI), for e-learning, as they presented their research results, contemporary trends and scientific, as well as educational projects devoted to Artificial intelligence (AI), MOOCs, augmented reality (AR), virtual reality (VR), mobile learning and other topics related to digital technologies and innovative methods of education.

Professor Nian-Shing Chen from the National Taiwan Normal University, Taiwan, presented a Keynote Lecture titled “Revolutionizing Education with Pedagogical AI Agents” (Figure 1).

He presented essential concepts about AI Agent, including:

- From human writing programs to AI writing programs
- From AI as tools to AI colleagues
- Millions of AI agents are entering the workforce across all domains
- Agents sitting on top of tools
- Multi-modality LLM
- Embodied AI – Robotics
- Realtime AI and Edge AI

To summarize his speech, , in the third part of his address, Professor Nian-Shing Chen demonstrated that science should be integrated with technology (AI Agent + Robot + IoT Object).

Subsequently, Professor Anna Ślósarz, from the Pedagogical University of Kraków, initiated a discussion on the active NAVOICA forum and the Polish MOOC platform.



Figure 1. Keynote Speaker Professor Nian-Shing Chen

A u t h o r of the photo: Konrad Matinyarare.

A team of researchers from Bulgaria, Professor Todorka Gluskova and her team Asya Stoyanova-Doycheva, Vanya Ivanova, Irina Krasteva, Mariya Grancharova-Hristova from Plovdiv University in Bulgaria, delivered a lecture titled: “An approach to automatic test generation from ontologies in the virtual education platform”. The team introduced the audience to the topic of AI in education (AIEd), and cyber-physical and social education space (VES). The attendees learned what semantic modelling in VES is about and the importance of semantic web technologies.

Next, Prof. Małgorzata Przybyła-Kasperek, and her group of researchers, Prof. Rafał Doroz, Prof. Agnieszka Lisowska, Prof. Grzegorz Machnik, MSc, Arkadiusz Nowakowski, Dr Krzysztof Wróbel, and Prof. Beata Zielosko from the University of Silesia in Katowice, Institute of Computer Science, Poland, familiarized the audience with the process of exploring the educational efficacy and potential of 24-hour Hackathon Programming Marathon – HackEmotion. They explained what a Hackathon is and its educational benefits.

Representatives from the Poznań University of Medical Sciences, Prof. Magdalena Roszak and Prof. Katarzyna Zaorska, , called the report on the topic of “Multimedia resources should be standard in e-learning for medical and health sciences” on behalf of the team consisting of Prof. Katarzyna Zaorska, Dr Anna Smelkowska, Prof. Przemysław Keczmer, Prof. Karolina Szczeszek, Prof. Barbara Purandare, Prof. Agnieszka Karbownik, Prof. Marta Jokiel, Prof. Maurycy

Jankowski, Prof. Michał Duchodolski and Prof. Magdalena Roszak. The project “E-materials for the industry: health care, social welfare, protection of the safety of persons and property” co-financed by EU funds under the European Social Fund and Łódź University of Technology and Poznań University of Medical Sciences enabled the design and creation of educational electronic sources based on interactive and multimedia materials in six professions:

- Occupational therapist
- Medical caretaker
- Pharmaceutical technician
- Medical sterilization technician
- Orthopaedic technician

The didactic content included interactive exercises, a dictionary, a teacher’s teaching guide, netography and bibliography and a user manual.

Prof. Stefan Gubo, from J. Selye University, Komarno, Slovakia, spoke on the topic of “Solution time and confidence in the assessment of algorithmic and logical thinking of first-year computer science students” on his behalf and his co-author, Prof. Ladislav Vegh. Dr. Miroslav Hruby from the Department of Informatics and Cyber Operations Faculty of Military Technology, University of Defence, Brno, Czech Republic, introduced programming in technical-focused education.

After the break, Professor Nian-Shing Chen conducted the Workshop titled „Designing pedagogical AI agents” on the first day of the conference (October 14). He presented theoretical bases and practical aspects of designing pedagogical AI agents step by step using ChatGPT 4.0 and the Kebbi Air robot as well as the Internet of Things (IoS) component (Figure 2).



Figure 2. Professor Nian-Shing Chen conducted the Workshop titled „Designing Pedagogical AI Agents”

A u t h o r of the photo: Jakub Sacewicz.

The second day (October 15) in the framework of DLCC2024 conference started with the round table debate “E-Learning and Enhancing Soft Skills: Contemporary Models of Education in the Era of Artificial Intelligence”, moderated by Eugenia Smyrnova-Trybulska and Magdalena Roszak. The participants of the debate were Prof. Nian-Shing Chen – Taiwan, Prof. Todorka Glushkova – Bulgaria, Prof. Pedro Isaias – in Portugal, Prof. Anna Ślósarz – Poland, Prof. Nataliia Morze – Ukraine, Prof. Štefan Gubo – Slovakia, Prof. Małgorzata Przybyła-Kasperek – Poland, Dr Miroslav Hruby – Czech Republic. The main reflections were presented by experts from different countries in the area of AI in education, who participated in the round table debate “E-Learning and Enhancing Soft Skills: Contemporary Models of Education in the Era of Artificial Intelligence”. The agenda included three topics: 1) E-learning and enhancing soft skills: contemporary models of education in the era of artificial intelligence; 2) Good practice examples using AI in education for soft skills development; 3) AI – perspective and challenges used in education (Figure 3).



Figure 3. Participants of the round table debate “E-Learning and Enhancing Soft Skills: Contemporary Models of Education in the Era of Artificial Intelligence”

A u t h o r of the photo: Emilia Gogol.

During the plenary and conference session on the second day of the conference, the researchers and participants were presented with 22 lectures, and two workshops „Enhancing the competences in area AI based microlearning using Priscilla platform” and “AI without secrets” were held, conducted by prof. Małgorzata Przybyła-Kasperek and dr Kornel Chromiński.

In total, the conference included 29 presentations, three workshops, a round table debate and a poster session.

The DLCC2024 conference was actively attended by 81 participants (Figure 4) from over 10 countries in an offline and online mode, including 9 from the University of Silesia, 18 from Poland and 54 from abroad. There were also over 100 passive participants.



Figure 4. Participants of the DLCC2024 conference

Author of the photo: Emilia Gogol.

The articles developed based on the conference participants' papers will be published in a book. The monograph on "E-learning & Enhancing Soft Skills" will be published by the renowned Springer publishing house.

Considering the international scope and involvement of respected institutions, the DLCC2024 conference is a significant international scientific event for a wide range of scientists, teachers, PhD students, students, educators, tutors, mentors, and anyone interested in the future of education, especially in the context of digital learning environments and the implementation of new technologies and innovative methods. The conference video available on the University of Silesia YouTube channel: <https://www.youtube.com/watch?v=MrmomAgwslo&t=63s>

The next 17th edition of the DLCC2025 conference is planned for October 21–22 2025 at the WSNE UŚ in Cieszyn. We thank you for your interest in this scientific event and invite you kindly to participate in this international forum.