INTED 2025

19th International Technology, Education and Development Conference

3-5 March 2025
Valencia (Spain)

CONFERENCE PROCEEDINGS

Sharing the Passion for Learning

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INTED2025 Proceedings
19th International Technology, Education and Development Conference
3-5 March, 2025
Valencia, Spain

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Preface

This book contains the proceedings of the INTED2025 conference, featuring papers presented at the 19th annual International Technology, Education and Development Conference, held in Valencia, Spain, from March 3rd to 5th, 2025.

This 19th edition aimed to provide a platform for educators worldwide to share knowledge, access the latest research and innovations in education and technology, and network with professionals from over 70 countries through parallel sessions, social events, interactive workshops, and plenary sessions. The INTED2025 plenary sessions are available to view at IATED Talks: https://iated.org/talks/.

All papers presented at INTED2025 focus on themes such as educational research, pedagogical innovations, technology in education, teacher training, accreditation, curriculum design, university-industry cooperation, and distance learning.

The INTED2025 Proceedings are included in the IATED Digital Library: library.iated.org. The INTED2025 International Program Committee was composed of lecturers and researchers from all over the world. Papers were blind peer-reviewed and the following points were evaluated: information content, general structure, clarity of contents, originality and relevance to the educational field.

INTED endeavors to meet the expected ethical standards when publishing conference proceedings that contain high-quality original research articles. All authors that published papers in the INTED2025 Proceedings signed the IATED copyright transfer form. IATED guarantees the high technical and professional quality of the publications, and that good practice and ethical standards are maintained. More information about the publication ethics of IATED is available at: https://iated.org/publication_ethics.

As always, we wish to extend our most sincere thanks and best wishes to all members and delegates who have contributed to the INTED2025 Conference Proceedings.

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INTED2025 Keynote Speakers

Michael Wooldridge – University of Oxford, United Kingdom

Keynote speech:
Generative AI: Where it came from, what it is, and what it means for Education

Artificial Intelligence (AI) has been in the headlines for a decade, but progress over the last few years has been startling. The headline breakthrough in the new AI is generative AI-systems like ChatGPT – large scale, general purpose AI systems that are capable of things that seemed far out of the reach of AI just a few years ago. In this talk, AI expert Wooldridge will talk through where generative AI came from – why it emerged now, and what the ingredients were that came together to create it – and highlight its core capabilities and limitations. He'll then focus on education, widely expected to be one of the most important and groundbreaking applications for this remarkable new technology. He'll discuss what generative AI means for educators – how they can use it to do their jobs better – and what it means for students. Generative AI is not going to mean that we don't need teachers – but it's going to change their job profoundly. In this talk, you'll discover why, and what this means for you.

Biography:
Michael Wooldridge is an academic and author specialising in Artificial Intelligence. He is a professor of AI at the University of Oxford, and Director for AI at the Alan Turing Institute, London. He has received the Lovelace Medal from the British Computer Society, the leading award for a UK computer scientist, and the Outstanding Educator Award from the Association for the Advancement of AI. Previously he was President of the European Association for AI, and President of the International Joint Conference on AI (IJCAI). He is also Editor-in-Chief of Artificial Intelligence, the academic AI journal. Michael's books include two science introductions to AI, The Ladybird Expert Guide to AI and The Road to Conscious Machines. He frequently gives lectures on AI including at the Hay Festival and Cheltenham Science Festival and is regularly interviewed on TV, radio and print on topics around AI and technology.

Michelle Miller – Northern Arizona University, United States

Keynote speech:
Memory in the Age of Technology: What to Know, What to Remember, and Why It Still Matters for Teaching and Learning

Memory and memorization have gotten a bad reputation among educators, especially as technology has seemingly taken over the task of remembering everything we need to know. Established and emerging technologies such as search engines, AI, and augmented reality have led many to conclude that the students of today don't need to worry about remembering the key facts and findings of their chosen fields. But that notion of a future where memory is obsolete may be a mirage. New research on reasoning skills has demonstrated that memory and thinking are far more intertwined and interdependent than previously thought, and human expertise – including a robust and accurate knowledge base - will continue to be a critical complement to digital memory. This talk explores these themes and presents the "Noble Truths of memory" that all teachers should know for the new digital age, and beyond.

Biography:
Dr. Michelle Miller is a cognitive psychologist, researcher, and speaker focused on supporting educators in creating effective and engaging learning experiences. She is the author of Minds Online: Teaching Effectively with Technology (Harvard University Press, 2014), Remembering and Forgetting in the Age of Technology: Teaching, Learning, and the Science of Memory in a Wired World (West Virginia University Press, 2022), and a new book, A Teacher's Guide to Learning Student Names: Why You Should, Why It's Hard, How You Can (University of Oklahoma Press, 2024). Dr. Miller is a Professor of Psychological Sciences and President's Distinguished Teaching Fellow at Northern Arizona University in Flagstaff, Arizona, USA.

Conference Tracks & Sessions

The INTED2025 conference program is available online at https://iated.org/INTED2025

ORAL SESSIONS MONDAY

Immersive Virtual Experiences and the Metaverse
Generative AI in Education: Teachers' and Students' Views
Service Learning & Community Engagement
Student Support & Wellbeing
Primary & Secondary Education
Mathematics Education
AI-assisted Language Learning (1)
Learning Management Systems & Open Educational Resources
Generative AI for Personalized Learning
Active and Experiential Learning
Pre-service Teachers
STEM+C Education
AI-assisted Language Learning (2)
Virtual Reality in Education
Risks and Challenges of Artificial Intelligence
Soft & 21st Century Skills
Education for Sustainability (1)
Workplace & Lifelong Learning
STEM Teachers
Foreign Language Learning
Technology-enhanced Learning
Integrating Artificial Intelligence in Education
Diversity Issues
Education for Sustainability (2)
Vocational Education and Training
Best Practices in STEM Education
English for Special Purposes

POSTER SESSIONS MONDAY

Pedagogical Innovations in Education
Challenges in Education and Research

ORAL SESSIONS TUESDAY

Assessment in the age of AI
Digital Transformation
Collaborative & Team-Based Learning
Blended & Flipped Learning
Technology in Primary and Secondary Education
Professional Development of Teachers (1)
Active Learning in Health Sciences Education
Competence Assessment
Learning Analytics
Inquiry and Challenge Based Learning
Student Engagement, Tutoring and Mentoring
Special Education Teachers
ICT Skills among Teachers
Health Sciences Education
Evaluation & Assessment
Coding & Computational Thinking
Simulation and Game-Based Learning
Science Popularization & Outreach Experiences
Assistive Technologies
21st Century Skills
Virtual and Augmented Reality in Health Sciences
Employability & Entrepreneurship Education
Online & Mobile Learning
Project and Problem Based Learning
Student Support
Special Education
Educational Leadership and Management
STEM Education
Work-integrated Learning
Internationalization & International Collaboration
Critical Thinking
University-Industry Cooperation
Early Childhood Education
Professional Development of Teachers (2)
Experiences in Engineering Education

POSTER SESSIONS TUESDAY

Emerging Technologies in Education
Educational Trends and Experiences

VIRTUAL SESSIONS

DIGITAL & DISTANCE LEARNING
Blended, Hybrid & Mobile Learning
Distance Education in Times of Crisis
e-Learning Experiences
Learning Analytics & Educational Data Mining
MOOCs & Open Educational Resources

DIGITAL TRANSFORMATION OF EDUCATION
21st Century Skills
Data Science & AI in Education
Digital Technologies and Resources for Distance Learning
Digital Transformation
Educational Programming & Robotics

INNOVATIVE EDUCATIONAL TECHNOLOGIES
Chatbots & Robots
Generative AI in Education
Technology Enhanced Learning
Videos and Social Media in Education
Virtual & Augmented Reality

ACTIVE & STUDENT-CENTERED LEARNING
Active & Experiential Learning
Developing Soft and Transversal Skills
Gamification & Game-based Learning
Pedagogical Innovations
Problem & Project-Based Learning

ASSESSMENT, MENTORING & STUDENT SUPPORT
Assessment & Evaluation
Mentoring & Tutoring
Student Support & Motivation
Student Wellbeing

TEACHER TRAINING & ED. MANAGEMENT
Educational Management
ICT & Digital Skills
Professional Development of Teachers
Teacher Training and Support

QUALITY & IMPACT OF EDUCATION
Experiences and Challenges in Curriculum Design
Links between Education and Research
Quality in Education
Sustainability & Social Impact of Education
University-Industry Collaboration

EDUCATIONAL STAGES & LIFE-LONG LEARNING
From Pre-school to Secondary Education
Higher Education and the Labour Market
Life-long & Workplace Learning
Vocational Training
Non-Formal and Informal Learning

MULTICULTURALITY & INCLUSION
Diversity Issues
Inclusive Education
Multicultural Education
Special Educational Needs

STEM EDUCATION
Computer Science Education
Engineering Education
Mathematics & Statistics
STEM Experiences

LANGUAGE LEARNING AND TEACHING
Foreign Languages
Language Learning & Translation Studies
New Technologies in Language Learning

DISCIPLINE-ORIENTED SESSIONS
Architecture & Interior Design Education
Business & Tourism Education
Health Sciences Education