

ITH INTERNATIONAL CONFERENCE OF EDUCATION, RESEARCH AND INNOVATION

CONFERENCE PROCEEDINGS

11-13 NOVEMBER 2024 iated.org/iceri



17TH INTERNATIONAL CONFERENCE OF EDUCATION, RESEARCH AND INNOVATION

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Published by IATED Academy iated.org

ICERI2024 Proceedings

17th annual International Conference of Education, Research and Innovation 11-13 November, 2024 Seville, Spain

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DOI: 10.21125/iceri.2024 ISBN: 978-84-09-63010-3

ISSN: 2340-1095

Book cover designed by J.L. Bernat

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These proceedings are published by IATED Academy. The registered company address is Plaza Legión Española 11,46010 Valencia, Spain.

Bibliographic Information

Book Title Book Series Editors

17th annual International ICERI Proceedings Luis Gómez Chova Conference of Education,
Research and Innovation ICERI Proceedings Chelo González Martínez Joanna Lees

Publication YearPublisherPublisher Address2024IATED AcademyValencia, Spain

Book ISBN Series ISSN DOI

978-84-09-63010-3 2340-1095 10.21125/iceri.2024

Conference NameDatesLocationICERI202411-13 November, 2024Seville, Spain

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Preface

The ICERI2024 Conference Proceedings contain the papers presented at the 17th annual International Conference of Education, Research and Innovation. This conference was held in Seville from the 11th to 13th of November 2024.

This annual conference was attended by educators, researchers and technologists from more than 70 countries with the purpose of networking with other professionals and sharing their knowledge about education, pedagogical technologies, and educational innovations. To fulfil this goal, networking activities, plenary sessions, parallel thematic sessions, and networking activities and workshops were offered. Keynote speeches were delivered by global educational experts. You can see their talks at IATED Talks: https://iated.org/talks/.

ICERI2024's scope was focused on the topics listed here: Pedagogical Methods and Innovations, Technology in Teaching and Learning, Inclusive Learning, Special Education, Emerging Technologies in Education, International Cooperation, Teacher Training and Educational Management, Curriculum Design, Accreditation and Quality in Education, University-Industry Cooperation and Open Educational Resources.

The ICERI2024 International Program Committee is composed of lecturers and researchers from across the world. A blind peer review process was followed to ensure the quality of the final publication. During this process, the following criteria were evaluated: content relevance, clear structure, clarity, originality, and alignment with the conference topics and disciplines.

As IATED strives to guarantee high technical and professional quality of the publications, and that good practice and ethical standards are maintained, all authors included in this publication signed the copyright transfer agreement. More information about our publication ethics 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 ICERI2024 Conference Proceedings.

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ICERI2024 Keynote Speakers

Bart Rienties - The Open University, United Kingdom



Keynote speech: Implementing learning analytics and learning design at scale: Lessons from the Open University UK and SoLAR

The Open University UK has been designing, implementing, and evaluating how to effectively provide meaningful learning opportunities for hundreds and thousands of learners across the globe. Since 2015 a range of learning analytics studies and practical intervention studies have shown that these learning analytics and learning design decisions made by educators

substantially influence what, how and when learners are learning. However, applying and translating learning design and learning analytics in other institutions, countries and contexts is not a mere copy-paste job. In this keynote at ICERI2024 I will reflect on some of the lessons learned of how you might start to think about implementing learning analytics and learning design in your own context, if you have not already started to do so already. I will also reflect on how learning analytics and learning design has been implemented across the globe based upon the experiences within the Society of Learning Analytics Research (SoLAR).

Biography:

Dr. Bart Rienties is Professor of Learning Analytics and programme lead of the learning analytics and learning design research programme at the Institute of Educational Technology at the Open University UK. He leads a group of academics who provide university-wide learning analytics and learning design solutions and conduct evidencebased research of how students and professionals learn. As educational psychologist, he conducts multidisciplinary research on work-based and collaborative learning environments and focuses on the role of social interaction in learning, which is published in leading academic journals and books. His primary research interests are focussed on Learning Analytics, Professional Development, and the role of motivation in learning. Furthermore, Bart is interested in broader internationalisation aspects of higher education. He has successfully led a range of institutional/national/European projects, and has received a range of awards for his educational innovation projects. He is President of the Society of Learning Analytics Research (SoLAR), the largest researcher community on learning analytics. He has published over 300 academic outputs, and is the 1st most published and cited author on learning design and learning analytics in the period 2014-2023 (Drugova et al. 2023), the 2nd most published author on Networks in Education in period 1969-2020 (Sagr et al. 2022), and the 3rd most published author on EdTech in the period 2002-2022 (Aaradhi & Chakraborty, 2023).

Pat Yongpradit – Code.org, United States



Keynote speech: AI Literacy: Teaching With and About AI

AI literacy is the foundation for realizing the benefits of AI while mitigating the risks. As AI becomes more prevalent, education systems must equip students with skills to recognize, evaluate, and create with these technologies. Beginning with an introduction to AI and its transformative impact, the session will delve into what AI literacy entails and why it is essential for educators and students alike. Rather than a general discussion of

"AI in education", attendees will gain insights into how the computer science (CS) education community has grappled with critical questions about the role of AI in the CS classroom. The session will highlight the potential of AI to enhance CS education and emphasize the opportunity to reflect on and rethink education as a whole.

Biography:

Pat Yongpradit is the Chief Academic Officer for Code.org, a non-profit dedicated to promoting computer science education, and lead of TeachAI, a global initiative to guide education leaders in rethinking education in an age of AI. His work spans policy and government affairs, curriculum and professional learning, school outreach, coalition building, and international development. Before becoming a global voice for K-12 computer science and AI education, he taught for 13 years, inspiring students to create mobile games and apps for social causes and broadening participation in computer science among underrepresented groups. He has been featured in the book, "American Teacher: Heroes in the Classroom," and has been recognized as a Microsoft Worldwide Innovative Educator. He is certified in biology, physics, math, health, and technology education. Although Pat currently spends most of his time in education policy conversations, he still finds ways to sneak into the classroom!

Conference Tracks & Sessions

The ICERI2024 conference program is available online at https://iated.org/iceri2024

ORAL SESSIONS MONDAY

Assessment in the age of AI

ICT Skills among Teachers

Integrating Generative AI into Programming Education

Entrepreneur-ship Education

Workplace Learning

Technology-enhanced Learning

Developing Soft Skills Educational Management

Health Promotion

Student Wellbeing in Higher Education

Sustainability in Architecture, Engineering & Construction

AI Skills among Teachers

Digital Repositories & Open Educational Resources

Generative AI and the World of Work

Entrepre-neurial Competences

Current Issues in Work-Integrated Learning in Europe

Learning Analytics

Information & Data Literacy

Educational Management & Leadership

STEM Education (1)

Student Support and Wellbeing (1)

Technology-Enhanced Business Education

Generative AI integration in Education

e-Learning

Experiences in Programming Education

International Projects & Mobility Experiences

Curriculum Design

Evaluation & Assessment

Digital Literacy

Educational Management in Higher Education

Experiences in Nursing Education

Inclusion of Learners with Special Educational Needs (1)

Accounting & Business Education

Microlearning & Videos for Learning

Best practices in Online Education

Robots in Education

Entrepreneur-ship Education & Competence Development

Critical Thinking

Online Assessment & Feedback

Education in Post-pandemic Times

Digital Transfor-mation of Education

New Technologies in Health Sciences Education

Research on Gender in Education

New Trends in Architecture and Civil Engineering Education

POSTER SESSIONS MONDAY

Pedagogical Innovations in Education Challenges in Education and Research

ORAL SESSIONS TUESDAY

VLEs & LMS

Game-Based Learning

Challenges in Research and Development in Higher Education

Student Support

Sustainability & Social Impact of Education

Project-Based Learning

Pre-service Teacher Training (1)

Encouraging STEM Careers

Professional Development of STEM teachers (1)

Innovations in Special Education

Language Learning

Immersive Technologies

Gamification

Industry-University Collaboration and Innovation

Student Engagement and Motivation

Education for Sustainability

Problem-Based Learning

Pre-service Teacher Training (2)

Experiences in Engineering Education STEM Pre-service Teacher Training

New Technologies in Special Education

Language Learning Assessment

Augmented and Virtual Reality

Experiential Learning

Quality in Education

Student Support and Wellbeing (2)

Sustainability in Higher Education

Flipped and Blended Learning

New Technologies for Teacher Training

STEM Education (2)

Professional Development of STEM teachers (2)

Diversity Issues & Inclusive Education

Teaching Reading and Writing

Ethics in the Age of AI

Pedagogical Innovations (1)

Creativity & Design Thinking

Tutoring & Coaching

Service Learning & Community Engagement

Lifelong Learning and Continuing Education

Professional Development of Teachers

Challenges for Computer Science Education

Technology-Enhanced STEM Education

Inclusion of Learners with Special Educational Needs (2)

Arts and Humanities in the 21st Century

AI-Powered Education

Pedagogical Innovations (2)

Collaborative International Learning Experiences

Challenges for Vocational Education and Training

Adult Education

Work-Integrated Learning and Employability in the 21st Century

Communities of Practice and Collaboration in Education

STEM in Schools

Experiences in STEM Education

Inclusion & Support of Minorities

Early Childhood Education

POSTER SESSIONS TUESDAY

Emerging Technologies in Education and Research **Educational Trends and Experiences**

VIRTUAL SESSIONS

DIGITAL & DISTANCE LEARNING

Blended, Hybrid & Mobile Learning Distance Education in Times of Crisis e-Learning Experiences LMS & VLEs MOOCs & Open Educational Resources

DIGITAL TRANSFORMATION OF EDUCATION

21st Century Skills
Data Science & AI in Education
Emerging Technologies in 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

OUALITY & IMPACT OF EDUCATION

Challenges in Curriculum Design Links between Education and Research Mobility & International Projects 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 & Design Education Business & Tourism Education Health Sciences Education Military Education and Training