

EDINNOVATE 2026

3rd EdInnovate 2026: Innovations in Education and e-Learning



26th & 27th April 2026



Tokyo, Japan



Organizer Logo



IFERP Academy



3rd EdInnovate 2026: Innovations in Education and e-Learning, Tokyo, Japan

Copyright © 2026 by IFERP Academy. All rights reserved.

Copyright and Reprint Permission

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the publisher.

ISBN 978-81-981425-9-7

This edition is produced in India and is intended for worldwide distribution.

However, no part of this publication may be exported without the prior permission of the publisher, IFERP Academy.



9 788198 142597

Table of Contents

Preface	V
About EdInnovate 2026	VI
About IFERP Academy	VII
Message From Dignitaries, IFERP	VIII
About Speakers	X
About Committee	XXI
Abstracts Index	XXII



Conference Theme

Transforming Education through Digital Innovation

Preface

We are delighted to extend a warm welcome to all participants attending 3rd EdInnovate 2026: Innovations in Education and e-Learning organized by IFERP Academy on April 26th-27th, 2026 at Tokyo, Japan. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the field of e-learning and education. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for 3rd EdInnovate 2026 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of e-learning and education. All submitted papers were subject to rigorous peerreviewing by 2–4 expert referees, and the papers included in these proceedings have been selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results in e-learning and education but also serve as a valuable summary and reference for further research in this field.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the many professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also extend our appreciation to the external reviewers for providing additional support in the review process and to the authors for contributing their research results to the 3rd EdInnovate 2026.

We express our gratitude to the keynote and individual speakers and all participating authors for their dedication and hard work. We also sincerely appreciate the efforts of the technical program committee and all reviewers, whose contributions made this conference possible. Finally, we extend our thanks to all the referees for their constructive comments on all papers, and we express our deepest gratitude to the organizing committee for their tireless work in making this conference a reality.

About EdInnovate 2026

EdInnovate 2026: Innovations in Education and e-learning bring together a wide group of scholars, educators, and researchers. Organized by The IFERP Academy, this exciting conference calls for everyone to share the latest findings, explore various educational techniques, and encourage digital transformation in education. Taking place on the 26th-27th of April 2026 in Tokyo, Japan, EdInnovate 2026 is set to host lively debates, presentations & publication opportunities, and insightful events.

Scope

In an environment that is constantly evolving, it is more important than ever to acknowledge and implement new technologies in education. Our theme for EdInnovate 2026 is “Transforming Education through Digital Innovation” and we will be examining the critical role that digital transformation plays in driving excellence in education and its application in addressing complex issues.

Objective

The objective of EdInnovate 2026 is to advance the quality of education through digital transformation, while also encouraging collaboration, skill development, and driving innovation. Here are some of the many objectives that we aim to achieve:

- » Skill Development
- » Promote Discussion
- » Engage in Meaningful Conversation
- » Embrace Digital Transformation
- » Spotlight Innovation
- » Fuel New Research Horizons
- » Tackle Pressing Challenges
- » Improve Educational Excellence
- » Network and Grow

Benefits

- » Exposure to Expertise
- » Out-of-the-Box Thinking
- » Presenting and Publishing opportunity
- » Networking Opportunities
- » Knowledge & Skill Development
- » Increased Visibility of Work

About IFERP Academy

IFERP Academy is a well-known organization that focuses on engineering, science, and technology. IFERP envisions a global scientific community united by innovation in digital technology. The organization prioritizes advancing industrial trends, disseminating the most recent findings, and encouraging research endeavours that will shape the future of humanity.

With a team of experts, IFERP has established itself across Europe, the Middle East, Asia, and several other countries, including Iraq, Malaysia, Australia, and more. They have offered publication, networking, research support, and other work in various fields of science.

IFERP is an expert at putting together international conferences that bring together scientists, researchers, academics, students, and professionals from all over the world to collaborate. They also publish articles and publications that are indexed by Web of Science and SCOPUS. Important webinars are organized by IFERP and they also offer comprehensive research aid and guidance. Key elements of IFERP's objective include promoting Industry-Institute Interaction and taking part in Youth Empowerment projects. Through faculty growth, skill development, and ongoing research and publication projects, the organization is dedicated to helping professionals.

What IFERP Does

Academic Resource Accessibility: They make academic resources and support available to aspiring scholars in both rural and urban locations.

Diverse Educational Program: They organize a wide range of educational events such as workshops, conferences, webinars, seminars, guest lectures, short-term training programs, and faculty development programs.

Drive Innovation: They work hard to foster curiosity and creativity, and stay up to date on the newest trends and advancements in the dynamic field of Engineering, Science, and Technology.

Knowledge Sharing and Collaboration: They believe in the strength of the exchange of knowledge and actively collaborate with institutions, organizations, and associations to contribute to our shared objective of a better future.

Publication & Recognition: They also provide opportunities for research articles to be published in reputable journals and actively promote and encourage transdisciplinary research activities.

Mission

Upskilling the knowledge hub through technological innovation and excellence for the benefit of humanity.

Vision

A digitally equipped robust, dynamic & swift professional community integrating academics & industry for upgraded technical knowledge implementation.

Value

IFERP values the restoration of high level technological research, learning, collaboration, resource sharing & community-building traditions.

Goal

To serve as the foundation for all technological progress and advancement activities around the world.

Director's Message, IFERP



Siddh Kumar
Chhajer
Managing Director & Founder,
IFERP Academy,
Technoarete Group, India

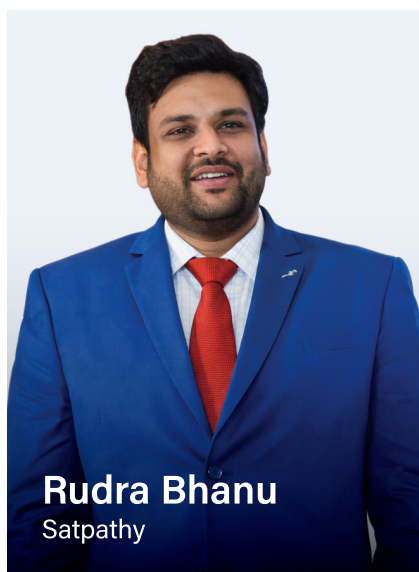
On behalf of Institute For Educational Research and Publication (IFERP Academy) & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the 3rd EdInnovate 2026: Innovations in Education and e-Learning is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in the field of Education and e-Learning.

This conference creates solutions in different ways and to share innovative ideas in the field of Education and e-Learning. 3rd EdInnovate 2026 provides a world class stage to the Researchers, Professionals, Scientists, Academicians and Students to engage in very challenging conversations, assess the current body of research and determine knowledge and capability gaps.

3rd EdInnovate 2026: Innovations in Education and e-Learning will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Science and Engineering from all over the world. 3rd EdInnovate 2026 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the field of Education and e-Learning.

CEO's Message, IFERP



CEO & Founder,
IFERP Academy,
Technoarete Group, India

IFERP is hosting the 3rd EdInnovate 2026: Innovations in Education and e-Learning this year in month of April, 2026. The main objective of 3rd EdInnovate 2026 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions.

The sessions serve as an excellent opportunity to soak up information from widely respected experts. Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader. I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of Organizing Committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.

About Invited Keynote Speaker

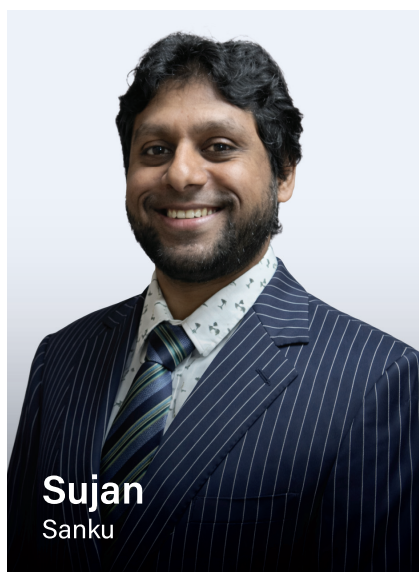


Mahakaushal University,
India

Dr. Bhaskar Jyoti is a distinguished Food Technologist and academician with expertise in research, institutional policy, and academic administration. She holds a Ph.D. in Food Science & Technology and has extensive experience in advancing life sciences research and innovation. Currently, she serves as Director – International Relations (Resource & Business Development) and Assistant Professor at Mahakaushal University, Jabalpur. She has previously worked with reputed organizations such as DFRL (DRDO) and CSIR-CFTRI, contributing to research, project development, and scientific analysis.

Dr. Jyoti is a certified NAAC Facilitator and Head of the Intellectual Property Rights (IPR) Cell, actively involved in quality assurance, accreditation, and regulatory compliance. She has successfully managed several high-value academic projects and contributes to the implementation of NEP 2020 initiatives across institutions. Her key interests include intellectual property management, academic governance, and fostering global collaborations. She is committed to strengthening academia-industry partnerships and promoting sustainable research ecosystems.

About Invited Keynote Speaker



Co-Founder & Chief Operating Officer
99 InfoSystems Inc. NY, USA

Sujan Sanku launched his first business in 2006, just before turning 18, leveraging changes in the Japanese Company Act. Overcoming the challenges of a young entrepreneur in a foreign, non-English speaking country, he grew my venture successfully. With expertise in accounting, communication, finance, IT, law, and management, He has spent over a decade bridging gaps for multinational organizations worldwide.

His multicultural background—Indian heritage and US/UK education—provides a unique perspective, honed through navigating crises like the 2008 and 2014 financial downturns and the COVID-19 pandemic. As a passionate advocate for education, he believes in the transformative power of life experiences for professional and social growth. Sujan Sanku excel in marketing across industries and countries, thriving in challenging situations where problem-solving is key.

About Keynote Speaker



**Prof. Johannes
Cronje**
Research Associate,
Independent Institute of Education
Emeris, Vega School, South Africa

Johannes Cronje is a retired professor of Digital Teaching and Learning in the Department of Information Technology at the Cape Peninsula University of Technology. Prior to that, he was the Dean of Informatics and Design. He has supervised more than 150 master's and doctoral students and published more than 85 peer-reviewed papers. He is a sought-after international keynote speaker and has been a visiting professor at seven universities internationally.

He was born in Davenport, Iowa, in 1959 when his parents were there doing more than just studying. At the age of eight months, he persuaded his parents to return to South Africa, where he attended Laerskool Anton van Wouw and later Pretoria Boys High School, matriculating in 1976. He then enrolled at the University of Pretoria, where he obtained a BA majoring in Afrikaans, English, and Anthropology, a BA Honours, and a teaching diploma before reporting for military service at the Infantry School, Oudtshoorn.

During his second year of national service, he completed an MA in Afrikaans Literature while serving on the Angolan border. He then taught English and Afrikaans at Pretoria Boys High until 1986, when he was appointed a lecturer in Language Communication at Technikon Pretoria. He obtained a Doctorate in Afrikaans Literature in 1990 and a Master's Degree in Computer-Assisted Education from the University of Pretoria. From 1994 to 2007, he was a professor of Computers in Education at the University of Pretoria, and from 2007 to 2021, the Dean of the Faculty of Informatics and Design.

He has also been a visiting professor at Sudan University of Science and Technology; Addis Ababa University, Ethiopia; the University of Joensuu, Finland; the University of Bergen, Norway; the Katholieke Universiteit Leuven, Belgium; the University of Namibia; and the University of the Free State, South Africa.

About Keynote Speaker



Associate Professor,
Universiti Malaysia Perlis,
Malaysia

Associate Prof. Dr. Umami Naiemah Saraih is the Head of the Business Department at the Faculty of Business & Communication, Universiti Malaysia Perlis (UniMAP), Malaysia. She began her career as an Administrative Officer (N41) at KUKUM/UniMAP in 2002 before being appointed as a Senior Lecturer (DS51) at the Centre for Innovation and Technopreneurship Studies (PPIPT), UniMAP, effective January 1, 2015.

She has also been serving as the Head of the Centre of Excellence for Social Innovation and Sustainability (CoESIS) from August 2022 to September 2024. She obtained her Bachelors Degree in Human Resource Management in 2000, a Master of Science in Management in 2007, and a Ph.D. in Management in 2014 from Universiti Utara Malaysia (UUM), Malaysia. Additionally, she is a Visiting Researcher at Daffodil International University (DIU), Bangladesh, and a member of the Board of Studies and the Faculty Board at Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST), Pakistan.

Since January 2022, she has also been appointed as the Editor-in-Chief of the International Journal of Business and Technopreneurship (IJBT), a MyCite-indexed journal at UniMAP. In terms of research, her focus is on Organizational Behavior and Human Resource Management. She has contributed to over 200 journal articles and conference proceedings in various WOS/SCOPUS and MyCite-indexed journals and proceedings. She has also authored more than 30 books and book chapters.

To date, she has produced over 20 copyrighted works in her research field. With nearly a decade of academic experience, she has supervised almost 50 postgraduate students (in full research mode and coursework).

About Keynote Speaker



Universiti Sains Malaysia,
Malaysia

Dr. Zainab Ajab Mohideen is an expert in Library Information Science, specializing in Information Systems, with significant contributions through research, publications, and presentations. Her expertise is recognized for her innovative approach and dedication to advancing knowledge and practice in her field.

Professional Experience: Dr. Zainab has extensive experience in the IT industry as well as in academic and professional environments. She has collaborated with various prominent institutions and organizations, such as the International Federation of Library Associations (IFLA) as an IT Corresponding Member. She received the Exemplary Data Steward Malaysia award from the Deputy Prime Minister and successfully brought the Malaysian Board of Technologists (MBOT) to USM through a Memorandum of Understanding (MoU) for the recognition of USM students.

Education: Dr. Zainab earned her Ph.D. from the University of Malaya, demonstrating her strong commitment to education and scientific research. She graduated after just 5 semesters, with Web of Science and Scopus publications to complete her Ph.D. at UM. She is a senior lecturer at School of Computer Sciences (CS) and Pay-Per-Use Lecturer at the Graduate School of Business (USM).

Awards and Recognition: Dr. Zainab has received numerous awards and recognition for her outstanding contributions in the administrative field at PPKT and USM. She was also appointed by USM Deputy Vice Chancellor of Industry and Community Network, Prof. Dr. Azlan Amran to contribute to the development of the USM Strategic Plan 2024–2029 in the scope of data analysis. Her work continues to inspire and influence both academic and professional communities. **Contributions and Scholarly Work:** Dr. Zainab is active in writing and publishing scholarly works that have helped advance new knowledge and practical applications. Her presentations at international conferences have been widely recognized since 2009 to the present.

Vision and Mission: Dr. Zainab Ajab Mohideen is committed to advancing knowledge and technology through innovative research and collaboration at USM. She is determined to apply her expertise in providing practical solutions that can benefit the wider community.

About Keynote Speaker



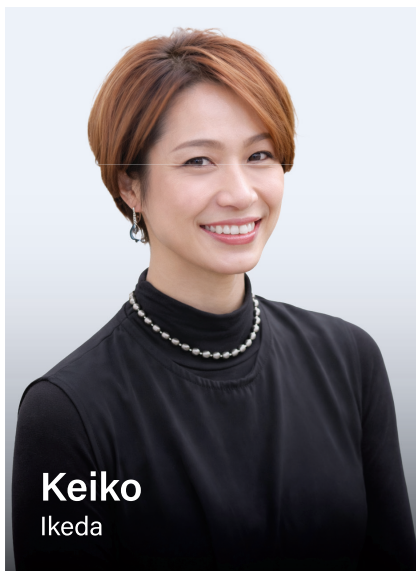
Athabasca University,
Canada

Professor Jon Dron is a member of the Technology Enhanced Knowledge Research Institute, and Associate Dean, Learning Assessment in the Faculty of Science and Technology at Athabasca University. Jon has received both national and local awards for his teaching, is author of various award-winning research papers and is a regular keynote speaker at international conferences in fields as diverse as education, learning technologies, information science and programming.

Jon has a first degree in philosophy, a masters degree in information systems, a post-graduate certificate in higher education and a PhD in learning technologies. Apart from his work in education, he has had careers in technology management, programming, and marketing, as well as over ten years as a professional singer.

He is the author of *Teaching Crowds: Learning and Social Media* (2014, with Terry Anderson), and *Control & Constraint in E- Learning: Choosing When to Choose* (2007). His latest book, published in 2023, is *How Education Works: Teaching, Technology Technique*. He lives in beautiful Vancouver where, when he is not spending time with his wife, children and grandchildren, he sails, cycles, writes, sings, and plays many musical instruments, mostly quite badly.

About **Keynote Speaker**



Keiko
Ikeda

Kansai University,
Japan

Keiko IKEDA is a senior leader and practitioner in international higher education, specializing in global partnerships, internationalization strategy, and education-industry collaboration. She is a Professor at Kansai University in Japan, where she also serves as Vice-Director of the Institute for Innovative Global Education (IIGE). In this role, she leads large-scale national and international initiatives focused on COIL/ Virtual Exchange, blended mobility, micro- credentials, and global employability, with particular emphasis on inclusive and sustainable internationalization.

Her work bridges academia, government, and industry, connecting Japan with partners across India, ASEAN, Europe, Africa, and North America. She has extensive experience designing and managing multi-stakeholder projects funded by national and international schemes, and is actively involved in developing talent pipelines aligned with workforce needs in areas such as digital transformation, sustainability, and hospitality. Beyond her university role, Keiko IKEDA serves as an independent advisor and consultant on international education and cross-border talent mobility, supporting institutions and organizations in strategy development and partnership building.

She is a frequent speaker at international conferences and forums, and contributes to policy discussions on the future of global learning, mobility, and higher education reform.

About Session Speaker



Dr. Prodhan
Mahbub Ibna Seraj

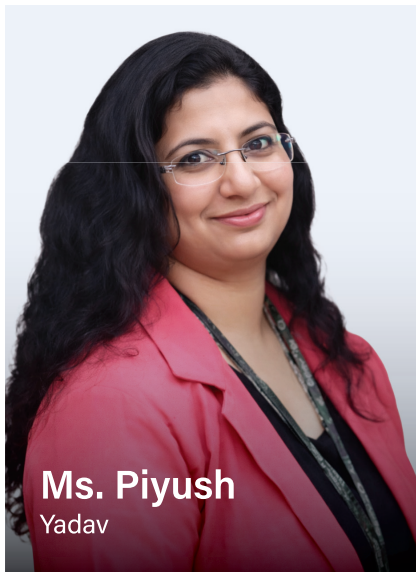
American International University,
Bangladesh

Dr. Prodhan Mahbub Ibna Seraj has been serving as an Associate Professor in the Department of English at American International University Bangladesh (AIUB). He completed his Ph.D. in Teaching English as a Second Language (TESL) at the Faculty of Education, Universiti Teknologi Malaysia (UTM), and M.A. in Applied Linguistics & ELT from the University of Dhaka.

He has achieved the BEST POSTGRADUATE STUDENT AWARD (Ph.D. program) at the 66th UTM Convocation for his outstanding research work. He is particularly interested in how technology could assist English Language Teaching (ELT).

He published 63 research works, such as articles, conference papers, and book chapters, in prestigious national and international peer-reviewed journals, including Scopus and Web of Science-indexed journals. He has reviewed 220 manuscripts of 53 different international journals, mostly indexed in Scopus and Web of Science. He is a member of the editorial board of 14 Scopus and Web of Science-indexed journals.

About Session Speaker



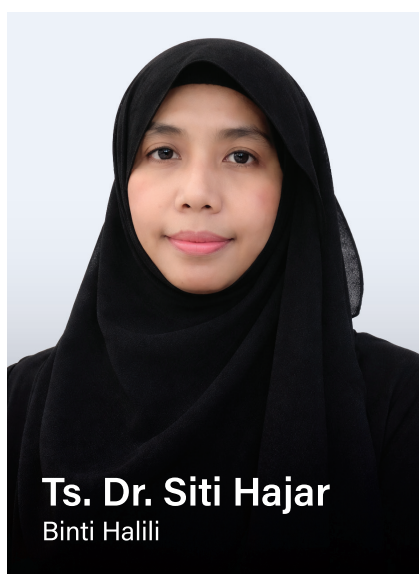
Founder,
Elite Wang Academy,
India

Ms. Piyush Yadav is the Founder of Elite Wang Academy, a globally accredited corporate training institute recognized by NIST and ICIA for its high training standards. With over nine years of experience, she has built a strong profile as a trainer, talent development specialist, and corporate relationship expert.

She is a Certified Master Trainer, Train-the-Trainer Expert, and Posh Trainer, specializing in soft skills and leadership development. Her contributions have earned her notable recognitions, including the Global Apex Award 2025 (RSNN) and the International Inspiring Woman Award 2025 (IIU). Ms. Yadav also serves as an Editor and Co-Author, acknowledged by Bhabad International – World Record Team, Shiksha Yatra, and Speakthon 4.0. As a Corporate Training, Coaching Expert, she focuses on leadership communication, public speaking, time management, and emotional intelligence. With a solid background in talent acquisition and placement, she is dedicated to bridging skill gaps and supporting career development.

Her impact extends globally, having trained students and professionals across India and abroad through 100+ webinars and podcast sessions. A visionary leader, she is committed to shaping future trainers and professionals through innovative training methodologies.

About Session Speaker



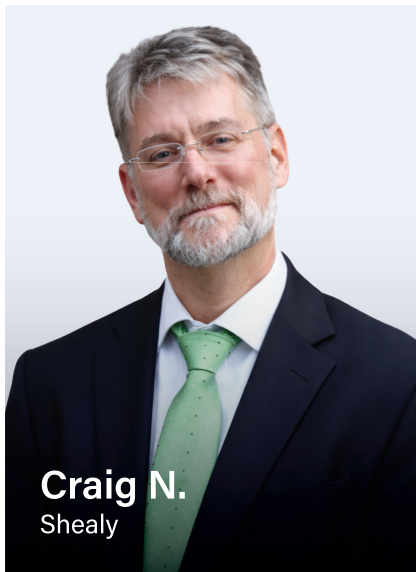
Professor,
Universiti Malaya,
Malaysia

Ts. Dr. Siti Hajar Halili is a Professor in Innovative Digital Learning at Universiti Malaya, Head of the Curriculum, Instructional Technology Department. A professional technologist (Ts) under MBOT, she was formerly with the Research Division of the Prime Minister's Department in Malaysia. She holds a Ph.D. in Adult Education Technology, a Master's in Educational Technology (USM), a Degree in Information System Management (UiTM).

Her expertise focuses on Flipped Learning, Open Distance Learning, Digital Badges Learning, Instructional Design, Technology and Digital Curriculum Innovation. She actively publishes in ISI, SCOPUS, national & international journals, books, book chapters. She has received multiple awards, including the Dean's Award, Best Presentation Award, Excellent Service Award, Gold Award Most Outstanding Reviewer.

She is also an ODL expert, Programme Coordinator for UM's ODL and Master of Instructional Technology program Head Auditor for the Faculty of Education. She was also the Chief Editor of Jurnal Penyelidikan Pendidikan a reviewer for various journals conferences

About Session Speaker



Executive Director,
International Beliefs and Values Institute,
United States

Craig N. Shealy, Ph.D. is Executive Director of the nonprofit and nonpartisan International Beliefs and Values Institute or IBAVI, a Nehru Chair Professor in the Department of Human Development and Family Studies at Maharaja Sayajirao University of Baroda, and developer of the Beliefs, Events, and Values Inventory or BEVI.

Dr. Shealy leads a range of international activities including the Cultivating the Globally Sustainable Self Summit Series. Projects from the Summit Series will be published in a book that Dr. Shealy edits for Oxford University Press.

Dr. Shealy's research on beliefs and values has been featured in multiple publications and presentations, including Making Sense of Beliefs and Values with Springer Publishing, and other scholarly forums. With hundreds of thousands of international administrations, the BEVI and its AI functionality are used in a wide array of grant-based initiatives and other contexts, such as education, mental health, leadership, and research.

A licensed clinical psychologist, Dr. Shealy is a Fulbright Specialist in Japan, Fellow of the American Psychological Association, Past President of APA's Division of International Psychology, and a National Register Legacy of Excellence Psychologist.

About Committee

Conference Convenor

Prof. Dr. G.P.Ramesh

Conference Convenor, India

Organizing Committee

Conference Co - Chair

Dr. Shielilo Amihan

Dean, Faculty and Academic Affair and Graduate School,
PHINMA Education Laguna, Philippines

Organizing Secretary

Mr. Sujan Sanku

Co-Founder & Chief Operating Officer, 99 InfoSystems
Inc. NY, US, Japan

Scientific Committee

Dr. Dennis A. De Jesus

Professor, Faculty of Education, Liceo De Pulilan Colleges,
Philippines

Dr. Syahrul Nizam Junaini

Senior Lecturer, Department of Computer Science,
Universiti Malaysia Sarawak, Malaysia

Dr. Jason Soh Chiaw Ker

Associate Professor, Faculty of Education, Sunway
College, Malaysia

Dr. Rodolfo Delgado

Associate Professor, Department of Education, University
of Kitakyushu, Japan

Dr. Ana Luisa Mateus Oliveira Chanca Torres

Professor, Department of Educational Technologies,
Polytechnic University of Santarem, Portugal

Dr. Fouad Amraoui

Professor, College of Education, Mohammed V University,
Morocco

Dr. Sanjay Pareek

Associate Professor, College of Engineering, Nihon
University, Japan

Professor J.D. Careemdeen

Professor, Department of Education, The Open University
of Sri Lanka, Srilanka

Dr. Zainab Ajab Mohideen

Senior Lecturer, School of Computer Science, Universiti
Sains Malaysia (USM), Malaysia

Review Committee

Dr. Mansour Amini

Senior Lecturer, Department of School Language,
Universiti Sains Malaysia, Malaysia

Dr. April Aura Cacho

Associate Professor, Faculty of Education, Northern Iloilo
State University Lemery Campus, Philippines

Dr. Sun Wei Yeoh

Senior Lecturer, Teaching and Educational Management,
Taylor's University, Malaysia

Abstracts Index

A Multiliteracy-Based Digital Edukit as A Learning Media in Elementary School: A Research and Development Study	01
Izzah Muyassaroh; Tatat Hartati; Non Dwishiera Cahya Anasta; Arie Rakhmat Riyadi; Andhin Dyas Fitriani; Ira Rengganis; Lea Christina Br. Ginting; Mutiara Syifa	
Innovations in Education: Digital Transformation and Institutional Modernization in Higher Education	02
Alimdjanova Yulduz Azizovna; Nosirova Nargiza Zhamoliddin Kizi	
Application of AI-Driven Adaptive Learning Technologies in E-Learning Environments	03
Toshboyeva Madina Alisher Qizi	
Redefining Quality Education (SDG 4) in the Age of Industry 4.0: An Expert-Driven Anticipation of What Future-Ready Information Technology Education Must Become	04
Amutha Venugopal; Alias Masek	
Professionalism and Innovation in TVET: How Instructors Harness Edtech for Effective Learning	05
Amutha Gopal Viloo Venugopal*; Nurul Naim binti Othman; Norsuzilawate binti Zulkapli	
Voice-to-SQL for Doctors Using LoRA QLoRA Fine-Tuned LLaMA via Unsloth Acceleration	06
Vinay Purilla*; Sarath Gavara; Anuradha Chinta	
A Micro-Credential Model for Strengthening SDGs Competencies among Primary School Teachers in Indonesia: Supporting Asta Cita and the Free Nutritious Meals Program	07
Suhartono; Pesi Suryani; Rosli Ismail; H Suryatmojo; W Widyatmanti; Cicih Murniasih; E A Prasetyanto	
VIRTRON: A Theory-Driven Immersive Virtual Reality (VR) Framework for Working at Height Safety Training in Construction	08
Norazmi bin Fadilah; Sharifah Mazlina Syed Khuzzan; Abdul Razak Sopian	
Advancing SDGs Education in Indonesia: The Role of Universitas Terbuka in Developing Sustainability Competencies	09
Pesi Suryani; Suhartono; Wong Sing Yun	
From Belief to Practice: How Engineering Instructors' Views of Conceptual Understanding Shape Classroom Enactment	10
Alejandro H. Espera Jr	
Bridging Strategic Management Education and Entrepreneurial Development: A Sequential Causal Model from Classroom Learning to Family Business Transformation	11
Dr. Pornsri Laurujisawat	

A Multiliteracy-Based Digital Edukit as A Learning Media in Elementary School: A Research and Development Study

Izzah Muyassaroh

Universitas Pendidikan Indonesia, Bandung, Indonesia

Tatat Hartati

Universitas Pendidikan Indonesia, Bandung, Indonesia

Non Dwishiera Cahya Anasta

Universitas Pendidikan Indonesia, Bandung, Indonesia

Arie Rakhmat Riyadi

Universitas Pendidikan Indonesia, Bandung, Indonesia

Andhin Dyas Fitriani

Universitas Pendidikan Indonesia, Bandung, Indonesia

Ira Rengganis

Universitas Pendidikan Indonesia, Bandung, Indonesia

Lea Christina Br. Ginting

Universitas Pendidikan Indonesia, Bandung, Indonesia

Mutiara Syifa

Illinois State University, Normal, USA

Abstract:

Background: The integration of multiliteracy signifies a profound transformation in educational paradigms; however, the lack of comprehensive learning media that effectively integrates the diverse dimensions of multiliteracy underscores a significant gap in contemporary educational practices.

Purpose: This study aims to develop a Multiliteracy-based Digital Edukit (MDE) for elementary education. Specifically, the research focuses on identifying the essential components for creating the edukit and gathering feedback from experts, students, and educators regarding these digital learning tools.

Methodology: The Research and Development method utilized the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model. Qualitative data were collected from various experts, including a language expert, a media expert, a content expert, a curriculum expert, and 23 elementary teachers. Additionally, small group observations were conducted with ten students selected through purposive sampling. The data collection instruments included expert validation sheets and questionnaires for students and teachers to gather feedback and responses.

Findings: MDE is an interactive digital learning tool designed to enhance elementary students diverse literacy skills, including reading, numeracy, scientific, digital, financial, and cultural literacy. The MDE achieved an average validation score of 4.8 (very valid) from media experts, 4.6 (very valid) from content experts, 4.8 (very valid) from language experts, 4.7 (very valid) from curriculum experts, and a mean user satisfaction score of 4.76 from teachers and 4.69 from students, underscoring its feasibility in fostering multiliteracy.

Novelty: The originality of this research lies in developing MDE that integrates diverse literacy skills into a single platform, specifically designed for elementary education and aligned with modern curricula.

Significance: The significance of this research lies in its contribution to enhancing elementary education through the development of an innovative digital learning tool that fosters multiliteracy skills, supports teachers in delivering curriculum-aligned lessons, and addresses the evolving demands of 21st-century education.

Index Terms:

Digital Edukit, Multiliteracy, Learning Media, Elementary School, Educational Technology

Innovations in Education: Digital Transformation and Institutional Modernization in Higher Education

Alimdjanova Yulduz Azizovna

Master's Student, State Financial Control and Audit, Economist, Financial Department, Tashkent Institute of Management and Economics, Uzbekistan

Nosirova Nargiza Zhamoliddin Kizi

PhD, Docent, Tashkent State University of Economics, Uzbekistan

Abstract:

In the era of accelerated digitalization and global knowledge integration, innovations in education have emerged as a critical driver of sustainable development and institutional competitiveness. Higher education systems across the world face increasing pressure to respond effectively to rapid technological advancements, evolving labor market demands, and the necessity of delivering inclusive and high-quality learning environments. Within this framework, digital innovation transcends its role as a supporting tool and becomes a comprehensive mechanism for transforming pedagogical models, institutional governance, and learning ecosystems.

This study examines the role of educational innovations in advancing higher education through digital transformation and institutional modernization, with particular emphasis on developing and transition economies. The research highlights the integration of e-learning platforms, adaptive learning systems, learning analytics, and digitally enhanced assessment mechanisms as strategic instruments for improving educational effectiveness and learner engagement. Furthermore, the study aligns innovative educational practices with global priorities such as Sustainable Development Goal 4 (Quality Education), emphasizing equitable access and lifelong learning opportunities.

Methodologically, the research is based on qualitative and comparative analysis of international academic literature, policy documents, and best practices in digital education. The findings demonstrate that sustainable educational innovation requires a holistic and system-oriented approach combining technological infrastructure, academic staff capacity building, institutional leadership, and supportive regulatory frameworks. Isolated technological initiatives without pedagogical redesign and institutional alignment are found to have limited long-term impact.

The paper also explores the relevance of educational innovation in training specialists in public finance, state financial control, and audit. Innovation-oriented education strengthens analytical thinking, data-driven decision-making, and ethical competence—skills essential for transparent public governance and effective fiscal management. The use of simulation-based learning, case-oriented instruction, and digital analytics tools significantly enhances students' readiness for complex professional environments.

The study concludes that innovations in education represent a multidimensional transformation encompassing technology, pedagogy, institutional culture, and policy orientation. Higher education institutions that strategically embed digital innovation demonstrate greater adaptability, resilience, and global integration. The findings contribute to international academic discourse on reimagining education through digital innovation and offer practical insights for policymakers, educators, and institutions pursuing sustainable educational transformation.

Application of AI-Driven Adaptive Learning Technologies in E-Learning Environments

Toshboyeva Madina Alisher Qizi

Master's Student, State Financial Control and Audit, Tashkent Institute of Management and Economics, Uzbekistan

Abstract:

As e-learning continues to grow, so does the demand for customized, data-driven teaching and learning strategies. In this study, we examine the real-world applications of AI-powered adaptive learning aids in mixed and online learning environments. We examine what machine learning algorithms, learning analytics, adaptive content systems, and natural language processing tools actually do, how they work together, and what type of impact they have on digital learning platforms.

Take machine learning models, for instance. They sift through student performance data, spot patterns in how people interact, and track assessment scores. All this lets them shape individual learning paths and tweak content difficulty on the fly. Learning analytics give teachers a way to keep an eye on progress and zero in on what students don't yet understand. And those NLP-based virtual tutors—think chatbots and automated messaging – they step in to give feedback and instructional support without needing a human in the loop.

We also look at how these adaptive technologies plug into big learning management systems like Moodle and Open edX. When put these tools together, they ramp up student engagement, help teachers tailor instruction to individual needs, and make e-learning more accessible and scalable.

Redefining Quality Education (SDG 4) in the Age of Industry 4.0: An Expert-Driven Anticipation of What Future-Ready Information Technology Education Must Become

Amutha Venugopal

Universiti Tun Hussein Onn Malaysia, Parit Raja, Malaysia

Alias Masek

Universiti Tun Hussein Onn Malaysia, Parit Raja, Malaysia

Abstract:

Industry 4.0 does not merely disrupt technologies; it disrupts the very meaning of education. As digital systems increasingly redefine how work is created, valued, and sustained, prevailing interpretations of quality education embedded in Sustainable Development Goal 4 (SDG 4) risk becoming temporally misaligned with the futures they are meant to serve. In information technology (IT) education, this misalignment raises a deeper question: What does quality education mean when the future itself is unstable? This study challenges conventional curriculum discourse by treating SDG 4 not as a policy benchmark, but as a normative anchor for anticipating future-ready education. Using an expert-driven foresight approach, the study employed the Fuzzy Delphi Method to synthesize anticipatory judgments from industry and academic experts with deep exposure to emerging digital technologies and workforce transformation. Expert insights were examined through multiple analytical lenses, capturing technological evolution, industry practice, and workforce sustainability. Rather than producing a definitive skills inventory, the findings reveal a shift in how future readiness is conceptualized away from static competencies and toward adaptive educational purpose, ethical digital capability, and sustained learning capacity. Therefore, this study reframes Industry 4.0 not as a technological challenge to education, but as a catalyst for redefining quality itself. By integrating sustainability principles with expert anticipation, this study offers a rare contribution that moves beyond incremental reform, proposing a future-oriented rethinking of IT education aligned with the evolving spirit of SDG 4. In doing so, it opens a new intellectual space for understanding education not as preparation for known jobs, but as preparation for uncertain futures.

Index Terms:

Sustainable Development Goal 4, Industry 4.0, Future-Ready Education, Expert Foresight, Redefining Quality, Information Technology Education

Professionalism and Innovation in TVET: How Instructors Harness Edtech for Effective Learning

Amutha Gopal Villoo Venugopal*

Temerloh Community College, Mentakab, Malaysia

Nurul Naim binti Othman

Temerloh Community College, Mentakab, Malaysia

Norsuzilawate binti Zulkapli

Temerloh Community College, Mentakab, Malaysia

Abstract:

Educational technology (EdTech) is transforming Technical and Vocational Education and Training (TVET) by introducing innovative tools that enhance teaching and learning. This study focuses on TVET instructors to investigate the impact of EdTech innovations such as AI-powered learning tools, VR/AR simulations, and online learning platforms on four key areas: (1) extent of EdTech usage, (2) professionalism and competence in instructional innovation, (3) challenges and institutional support, and (4) indirect impact on student engagement, skill mastery, and industry readiness. A survey-based research method will be employed to collect data on instructors' frequency of EdTech use, confidence, creativity in teaching, and perceived barriers and support. Expected findings include a positive relationship between EdTech usage and instructor professionalism, identification of main challenges limiting adoption, and evidence that enhanced instructor competence leads to improved student learning outcomes. The study aims to provide insights for professional development, policy-making, and effective integration of EdTech in TVET.

Index Terms:

Technical and Vocational Education and Training (TVET), Educational Technology (EdTech), Instructor Professionalism, Instructional Innovation, Student Engagement

Voice-to-SQL for Doctors Using LoRA QLoRA Fine-Tuned LLaMA via Unsloth Acceleration

Vinay Purilla*

Department of AI and DS, Siddhartha Academy of Higher Education, Vijayawada, India

Sarath Gavara

Department of AI and DS, Siddhartha Academy of Higher Education, Vijayawada, India

Anuradha Chinta

Department of AI and DS, Siddhartha Academy of Higher Education, Vijayawada, India

Abstract:

Enabling doctors, as primary healthcare professionals, to access patient data by translating clinical questions into structured SQL queries without requiring database expertise is critical. Traditional systems often depend on complex retrieval-augmented generation methods, which can be resource-intensive and less interpretable. The proposed approach utilizes a fine-tuned LLaMA 3.1 8B language model with schema-aware prompting, directly incorporating database structure information to enhance understanding and accuracy. Parameter-efficient fine-tuning techniques, including LoRA and QLoRA, combined with the Unsloth framework, produce a lightweight, domain-adapted model optimized for clinical Text-toSQL tasks on the MIM-ICSQL dataset. Integration of a voice-based interface further facilitates natural, hands-free interaction, supporting seamless clinical workflows. This method enables secure, interpretable, and scalable access to electronic health records, advancing clinical decision-making, cohort identification, and medical reporting, with strong generalization to unseen clinical queries and potential for deployment in resource-constrained healthcare environments.

A Micro-Credential Model for Strengthening SDGs Competencies among Primary School Teachers in Indonesia: Supporting Asta Cita and the Free Nutritious Meals Program

Suhartono

Universitas Terbuka, South Tangerang, Indonesia

Pesi Suryani

Universitas Terbuka, South Tangerang, Indonesia

Rosli Ismail

Gadjah Mada University, Yogyakarta, Indonesia

H Suryatmojo

Gadjah Mada University, Yogyakarta, Indonesia

W Widyatmanti

IPB University, Indonesia

Cicih Murniasih

Atma Jaya Chatolic University, Indonesia

E A Prasetyanto

Atma Jaya Chatolic University, Indonesia

Abstract:

Indonesia has less than a decade to accelerate the achievement of the Sustainable Development Goals (SDGs) by 2030. Primary education plays a pivotal role in preparing competent and future-ready human resources with strong sustainability literacy. However, teachers' capacity to integrate SDGs into instructional practices remains uneven. This study develops a micro-credential model as an alternative approach to strengthening the competencies of primary school teachers in the context of SDGs, while simultaneously supporting the national Asta Cita agenda, particularly the sustainable implementation of the Free Nutritious Meals (MBG) Program. The research employed literature review, instrument development, face-to-face surveys (36 respondents), online surveys (204 respondents) representing primary school teachers across Indonesia, and in-depth interviews with teachers involved in SDGs and MBG initiatives. Data collection was conducted from 2025 to early 2026. The findings indicate that teachers prioritize three SDG pillars economic, social, and environmental as key areas for competency enhancement. Within the economic pillar, SDGs 8, 7, and 9 are prioritized; in the social pillar, SDGs 3, 4, and 1; and in the environmental pillar, SDGs 6, 12, and 11. A significant insight emerging from the study is the strong linkage between SDG 12 and the MBG program. MBG functions not only as a nutritional intervention but also as a strategic educational platform to promote responsible consumption, strengthen local food systems, reduce food waste, and introduce circular economy practices in primary schools. This study underscores the relevance of an SDG-based micro-credential model to enhance teachers' capacity in supporting the sustainability of MBG and preparing Indonesia's Golden Generation 2045. Key recommendations include developing a structured, contextual, and needs-based micro-credential curriculum tailored to the realities of primary education in Indonesia.

Index Terms:

Micro-Credential, Sustainable Development Goals (SDGs), Primary School Teachers, Asta Cita, Free Nutritious Meals Program (MBG), Teacher Competency Development.

VIRTRON: A Theory-Driven Immersive Virtual Reality (VR) Framework for Working at Height Safety Training in Construction

Norazmi bin Fadilah

Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia, Kuala Lumpur, Malaysia

Sharifah Mazlina Syed Khuzzan

Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia, Kuala Lumpur, Malaysia

Abdul Razak Sopian

Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia, Kuala Lumpur, Malaysia

Abstract:

Falls from height remain a leading cause of occupational fatalities in the construction industry worldwide. Despite regulatory enforcement and mandatory safety training programs, accidents related to working at height activities continue to occur, indicating limitations in conventional compliance-based training approaches. Traditional safety training methods are often passive and theory-driven, providing limited opportunities for workers to experience realistic hazardous situations. Although Virtual Reality (VR) has increasingly been explored in construction safety training, many existing applications primarily focus on technological implementation rather than integrating established learning and behavioural theories to guide training design. This study proposes VIRTRON, a theory-driven immersive VR framework designed to enhance safety training for working at height activities in construction. The framework integrates principles from experiential learning theory and risk perception theory, together with immersive learning concepts, to structure an interactive VR-based safety training environment. VIRTRON aims to bridge the gap between theoretical safety instruction and real-world risk experience by enabling workers to interact with simulated height-related hazards through immersive visualisation within a safe yet realistic virtual environment. The study contributes by developing a theoretically grounded framework that explains how immersive VR features, including presence, interactivity, feedback, and environmental realism, can influence hazard recognition, risk perception, and workers' behavioural preparedness. The proposed framework provides a foundation for future empirical research and highlights the potential of immersive technologies to support more effective and experiential safety training in the construction industry.

Index Terms:

Immersive Virtual Reality, Working at Heights, Construction Safety Training, Experiential Learning, Risk Perception, Hazard Recognition

Advancing SDGs Education in Indonesia: The Role of Universitas Terbuka in Developing Sustainability Competencies

Pesi Suryani

Universitas Terbuka, South Tangerang, Indonesia

Suhartono

Universitas Terbuka, South Tangerang, Indonesia

Wong Sing Yun

Universiti Malaysia Sabah, Kota Kinabalu, Malaysia

Abstract:

The integration of Sustainable Development Goals (SDGs) into higher education has become increasingly important in supporting sustainable development and preparing students with sustainability competencies. Universities are expected to play a strategic role in promoting sustainability education through teaching, research, and community engagement. In Indonesia, however, the implementation of SDGs education in higher education institutions remains uneven and faces several structural and institutional challenges. This study aims to analyze the role of Universitas Terbuka in advancing SDGs education and developing sustainability competencies among students within the framework of open and distance learning.

This research adopts a qualitative descriptive approach combined with limited descriptive analysis of student-related data. Data were collected through literature review, institutional documents, and information related to SDGs programs implemented by Universitas Terbuka. The findings indicate that Universitas Terbuka contributes to SDGs education through various initiatives, including SDGs awareness programs, student engagement activities such as SDGs Camp, and the integration of sustainability topics into learning materials.

The study also shows that the open and distance learning model enables wider access to sustainability education and encourages student participation in sustainability-related activities. These initiatives contribute to strengthening students' understanding of sustainability issues and supporting the development of sustainability competencies necessary for achieving the SDGs in Indonesia.

Index Terms:

Sustainable Development Goals (SDGs), Sustainability Education, Sustainability Competencies, Higher Education, Open and Distance Learning

From Belief to Practice: How Engineering Instructors' Views of Conceptual Understanding Shape Classroom Enactment

Alejandro H. Espera Jr

Ateneo de Davao University, Davao, Philippines

Abstract:

Instructor beliefs play a critical role in shaping how engineering content is enacted in the classroom, yet these beliefs are often implicit and underexamined in instructional innovation efforts. This paper presents a focused case analysis drawn from a doctoral study investigating the relationship between engineering instructors' beliefs about conceptual understanding and their enacted teaching practices. Using classroom observations, instructional artifacts, and semi-structured interviews from a single undergraduate electrical and computer engineering course, the study examines how one instructor's emphasis on conceptual coherence influenced decisions related to content sequencing, use of representations, and student engagement strategies. Findings reveal that while the instructor articulated strong beliefs in fostering deep conceptual understanding, these beliefs were selectively enacted due to contextual constraints such as time pressure, curriculum expectations, and assessment structures. This misalignment highlights how pedagogical innovation is mediated not only by instructor intent but also by structural conditions of teaching environments. The case offers concrete insights into how belief-practice tensions emerge in real classrooms and underscores the importance of addressing instructor beliefs explicitly in faculty development and curriculum reform initiatives. The findings contribute to ongoing discussions on improving teaching quality and sustainability of pedagogical innovation in engineering education.

Bridging Strategic Management Education and Entrepreneurial Development: A Sequential Causal Model from Classroom Learning to Family Business Transformation

Dr. Pornsri Laurujisawat

Abstract:

This study examines the role of Strategic Management education in developing youth entrepreneurial capability through experiential learning within a real-world context. A qualitative research design combined with classroom action research was employed, involving 32 undergraduate students. The instructional approach integrated problem-based learning, project-based learning, and real family business case studies to facilitate experiential knowledge acquisition and application.

The study proposes and empirically validates a sequential causal model linking strategic management education, entrepreneurial capability, family business transformation, and entrepreneurial development. The findings demonstrate that experiential learning significantly enhances students' strategic thinking, analytical capability, and ability to apply strategic tools in practice. Students were able to transfer theoretical knowledge into real business contexts, resulting in observable improvements in business operations, including branding, differentiation, and value creation.

The results further confirm that entrepreneurial capability and family business transformation function as sequential mediators, explaining the mechanism through which educational interventions lead to entrepreneurial outcomes. This study contributes by providing a process-based explanation of education-to-impact pathways and highlights the critical role of real-world learning in bridging theory and practice. The findings offer both theoretical and practical implications for designing entrepreneurship education that effectively connects classroom learning with real-world business development.

Index Terms:

Strategic Management Education, Experiential Learning, Problem-Based Learning, Entrepreneurial Capability, Family Business, Sequential Causal Model

