World Federation of Associations for Teacher Education (WFATE) – 8th Biennial Conference & Association for Teacher Education in Europe (ATEE) – Spring Conference 2025

BOOK OF ABSTRACTS

Teacher Education in a Global World

27 to 30 May 2025, Tarragona

Edited by Mireia Usart, Mercè Gisbert, Jordi Mogas, Oriol Nadal & Tania Molero-Aranda

@RGet Applied Research Group in Education and Technology

UNIVERSITAT ROVIRA i VIRGILI Departament de Pedagogia

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8th Biennial Conference

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Editorial

The global challenges of our time, including social inequality, technological disruption, climate change and the shifting landscape of education, demand that we rethink the role of teacher education. The WFATE 8th Biennial Conference and the ATEE Spring Conference 2025, held jointly in Tarragona under the theme **"Teacher Education in a Global World"**, offered an invaluable space for academic dialogue, critical reflection, and the exchange of innovative practices.

This **Book of Abstracts** brings together the collective effort of scholars, teacher educators, practitioners, and doctoral researchers who are actively engaged in transforming education through a global lens. The volume includes **120 oral presentations**, **20 posters**, **3 symposia**, and **18 doctoral contributions**, with authors representing more than **30 countries across five continents**.

The contributions address pressing issues in teacher education, including:

- the ethical integration of artificial intelligence in learning environments,

- the design of inclusive and sustainable learning ecosystems,

- intercultural and decolonial pedagogies,

- the professional development of teachers in diverse socio-political contexts,

- and the cultivation of digital, emotional, and civic competencies.

Together, these works reflect a plurality of perspectives and methodologies, spanning qualitative, quantitative, and design-based approaches. They speak to the urgent need for teacher education systems that are resilient, future-oriented, and grounded in values of justice, equity, and sustainability.

As editors, we are deeply grateful to all the **authors** who contributed to this publication. Their work exemplifies a rigorous and engaged research practice that responds to both local and global educational challenges. We also wish to acknowledge the **scientific and organizing committees**, whose efforts ensured the academic quality and logistical success of the conference.

We hope that this Book of Abstracts serves not only as a record of scholarly exchange, but also as a catalyst for future research collaborations, policy engagement, and pedagogical transformation. We believe that the questions raised in these pages will continue to resonate beyond the conference itself, informing the evolving field of teacher education in the years to come.

Mireia Usart & Mercè Gisbert
Conference Chairs

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Posters

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Digital Transformation in Primary Education: Evaluating and Enhancing Organizational Competence

Laia Alguacil Mir

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Digital transformation has brought profound changes to society, affecting not only how people work and communicate but also how they learn. In this context, digital competence has become a fundamental skill for 21st-century citizens. In education, research and policies have largely focused on developing the digital competence of teachers and students. However, less attention has been given to the digital competence of educational organizations as entities responsible for driving and managing the integration of technology across all areas of their activity.

This doctoral thesis aims to analyze the organizational digital competence of primary education schools in Catalonia. The research begins with a review of relevant digital competence frameworks for educational organizations, leading to a unified and updated analytical model for understanding and assessing digital competence in primary schools. Using a mixed-methods approach, the study seeks to evaluate the current level of digital competence in educational organizations (quantitative) and identify key challenges and barriers that schools face in their digital development (qualitative). Additionally, it explores the strategies and measures that facilitate these processes (qualitative). This project also has a strong applied focus. Based on the research findings, practical tools will be developed for primary schools, including a digital competence self-assessment tool, development rubrics, and a guidance framework to support schools in enhancing their digital competence.

This study aims to fill a gap in the scientific literature on digital competence and education by offering an organizational perspective that complements existing individual-focused analyses. The findings will help inform policies and institutional practices to strengthen not only the digital competence of individuals within educational organizations but also that of the organizations themselves.

Keywords: digital competence, educational organization, primary school.

Teachers' use of data in lithuanian general education schools: pilot study results

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Data literacy is becoming a relevant topic for education systems striving to adapt to challenges and innovations. The aim of this study is to analyze the data literacy competence of general education teachers, which is very important for the effective implementation of learning analytics in the teaching and learning process. The theoretical part of the study examines the concept of data literacy in education, focusing on its significance for the pedagogical application of learning analytics. The role of data literacy in increasing data-based decision-making, individualizing learning and improving student learning outcomes is emphasized. In addition, the study presents a data use assessment system that includes adapted tools based on the Wayman et al. model.

The empirical part of the study involves a pilot survey that uses a specially developed questionnaire adapted from the Wayman Data Literacy Instrument to assess teachers' ability to collect, access, interpret and apply data to support decision-making to improve teaching and learning. The study focuses on key aspects of data use. The validity and reliability of the questionnaire will be assessed using statistical tools.

The main objective is to identify gaps in teachers' data use. The results help to shed insight into the challenges teachers face in understanding and using data in teaching and learning, the tools they need to use to implement data, and suggest directions for improving data usage. The study aims to contribute to the broader debate on data usage, data literacy in education and to offer insights for policy development, teacher education programmes and professional development.

Keywords: data literacy, teachers' competence, learning analytics.

Inclusion and equal access to the curriculum for primary school children in Ireland with dual registration in an ASD class in mainstream schools

Deirdre Ní Chonghaile
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Research Topic/Aim: Is it inclusion or exclusion for pupils with ASD with dual registration in ASD classes in mainstream primary schools in Ireland?

Do these pupils have equal access to the curriculum in comparison to their peers in the mainstream classroom?

Do these pupils receive quality education and equal opportunity for success in comparison to their peers in the mainstream classroom?

Is differentiation by choice used as a pedagogical approach in the ASD classes?

Theoretical Framework: In 2016, The National Council for Special Education conducted and published 'An Evaluation of Education Provision for Students with Autism Spectrum Disorder in Ireland'. Eighteen years prior to that in 1998, it was acknowledged by the Department of Education and Skills that education provision for children with autism was a distinct category. In 2002 the Task Force on Autism Report was published. In 2016 there were 3,137 mainstream primary schools in Ireland and 378 special classes. In 2023, there were 3,300 primary schools in Ireland and 401 autism classes. More classes were opened in 2024 bringing the total number of special classes to 2338. A range of evaluations, policies and best practice guidelines for ASD classes have been developed in Ireland since 2003 when The National Council for Special Education was established.

Methods: This is a mixed methods study, To date I have used qualitative research including observation, a questionnaire and conversations with teachers. I will be conducting interviews with teachers, principals and parents and also asking them to complete questionnaires.

Findings and Conclusions: There is huge variation in approaches to inclusion and pedagogical approaches in ASD classes in Ireland. Despite policies and best practice guidelines a further step is needed and it will have to start with Initial Teacher Education and continuous professional development for all teachers.

Keywords: Equal access to the curriculum, differentiation by choice, ASD classes in mainstream schools.

Artificial Intelligence Applied to Learning and Development

Natalia Tusquellas

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The integration of Artificial Intelligence (AI) tools in corporate education is transforming professional development by personalizing learning experiences, enhancing skill acquisition, and addressing employees' challenges in the era of Industry 5.0 and Society 5.0. This thesis explores the impact and potential of AI-driven solutions in professional development and talent management focusing on their role in improving employee performance and engagement, career development and reducing turnover rate.

The rapid advancement of technology has resulted in a large gap between the employees' current skills and the skills required to effectively perform in their present and future roles. AI-driven tools assist companies in optimizing employees' development by automating learning processes, identifying employee skill gaps, and creating personalized training paths providing real-time feedback.

Despite its advantages, AI adoption presents several challenges, such as algorithmic biases, data privacy concerns, and differences in digital literacy. These factors may prevent equitable implementation, emphasizing the need for ethical frameworks and collaborative strategies to ensure responsible AI integration.

This research highlights the importance of developing AI-powered training models that improve technical and soft skills, allowing organizations to strategically map and manage their talent, thus redefining the future of corporate education.

Keywords: Artificial Intelligence, Learning and Development, Professional Development.

Adaptive Learning of English as a Foreign Language using Artificial Intelligence Tools

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This research examines the implementation and contribution of artificial intelligence (AI) tools to adaptive learning in English as a Foreign Language (EFL) setting. The investigation employs a comprehensive three-phase mixed-methods approach, systematically documenting processes and outcomes.

The first phase encompasses a systematic literature review (2019-2023) analysing AI tools' pedagogical applications and teaching strategies in adaptive language learning. Findings demonstrate a significant role of AI-powered tools in providing personalised feedback and enhancing linguistic development while identifying critical considerations for technological integration and teacher training.

The second phase currently involves designing, implementing, and analysing data obtained from a seven-session training program integrating multimodal AI tools with a pilot group of Chilean pre-service English teachers. Each session combines writing activities with immediate AI-generated feedback and expert tutor guidance, addressing critical aspects of academic writing from initial diagnostic assessment through final composition. Students reported enhanced argumentative coherence, expanded academic vocabulary, and greater autonomy in text revision. However, they also faced challenges with technological accessibility and concerns about dependence on AI-generated content.

The third phase of the research will focus on the redesign and expert validation of the training program, ensuring methodological and pedagogical soundness. This study seeks to contribute by proposing an evidence-based framework for integrating AI tools into EFL instruction while validating a methodological model for adaptive learning environments in higher education.

Data collection employs multiple instruments, including diagnostic tests, student-written productions, surveys, and reflective journals. The analysis utilises Atlas.ti software for qualitative examination, complemented by statistical analysis of learning outcomes. The final phase encompasses expert validation of the refined formative proposal, ensuring methodological robustness and pedagogical effectiveness.

This research provides a comprehensive, evidence-based framework for integrating AI tools in EFL instruction. The findings will inform the development of adaptive learning environments that personalise language instruction while preparing future educators for technology-enhanced pedagogical practices.

Keywords: Adaptive learning, AI-enhanced language instruction, Multimodal AI tools.

Clarifying the Concept of Teacher Research: Definition, Scope, and Implications for Educational Practice

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Research is crucial for generating knowledge that enables collective transformation and progress, and it is also one of the main pillars of the educational system. Various actors can contribute to this expansion of knowledge in the field of education. Research is generally recognized as the role of "academic" professionals in any field. However, it is also valued that university professor remain active in research and even that school teachers conduct research in their own classrooms.

Historically, teachers' research activity has been acknowledged since around the 1970s, and its importance continues to grow today. Currently, in the Spanish educational system, research is considered a key component for the continuous improvement of pedagogical practices and the professional development of teachers, integrating transversally into the functions and responsibilities of educational teams. This perspective is also supported by various authors and international organizations. However, while interest in teacher research has significantly increased in recent years, the reality is that the definition and boundaries of the term "teacher research" remain ambiguous and vary across studies. In other words, there is a lack of consensus regarding its definition, the scope of the term, and its practical implementation. This situation hinders a unified understanding of the concept and often generates misleading expectations that are conveyed through educational policies, culturally influencing teachers and distancing them from the willingness to engage in "teacher research" and commit to it. Exploring the term and defining the characteristics of teacher research is an essential step in bringing this powerful tool closer to teachers, aligning expectations, and identifying the crucial supports needed to empower these professionals in integrating research into their practice effectively and sustainably.

Keywords: teacher research, professional development, research literacy.

Real-time biometric data analysis during immersive clinical simulation through wearables

Astrid Vidiella Pinyol

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Wearables are devices used in the healthcare professional's education in clinical simulation scenarios. They can be used as learning tools or as devices to collect biometric data such as heart rate. When applied to simulation, wearables provide data on both the practice performed and the professional executing it. Simulation scenarios enable the learning of standardized clinical interventions in a safe environment. However, despite being controlled spaces, they may expose professionals to high levels of perceived stress, potentially affecting the achievement of training objectives. Several studies evaluate wearables as educational support tools, but there is little evidence regarding their use for monitoring professionals during their training.

This doctoral thesis aims to answer the question: ¿Can wearables designed to measure physiological data establish a new paradigm in the training of healthcare professionals through realistic clinical simulation scenarios? To explore this, a clinical simulation scenario for a stroke code intervention will be developed. The training will involve a multidisciplinary team responsible for the immediate intervention of stroke patients. During the training, video recordings and physiological data measurements will be used to analyze behaviors related to non-technical skills, such as communication and teamwork. A validated tool will be used to assess professionals' non-technical skills, and the correlation, if any, between the biometric data collected and participants' subjective state—measured using a validated perceived stress scale—will also be evaluated.

The findings could open new research avenues regarding the use of wearables in medical education and their integration into training strategies to enhance learning and promote the well-being of healthcare professionals.

Keywords: wearables, simulation training, healthcare professionals' education.

Three-Way Conferences as an Opportunity for Student Progress Sharing

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This presentation explores the role of three-way conferences, involving students, teachers, and parents, as an effective tool for fostering communication and collaboration in the educational process. Unlike traditional parent-teacher meetings, these conferences actively engage students in presenting their own progress, goals, and achievements. This model promotes student autonomy, enhances self-reflection, and strengthens the partnership between school and family. However, the implementation of three-way conferences varies significantly across educational systems—while they are an integral part of instruction in some countries, they remain a relatively uncommon practice in others.

The presentation summarizes findings from selected studies analyzing the use of three-way conferences. It identifies key benefits in terms of student motivation, accountability, and engagement, as well as their impact on academic performance. Additionally, it addresses major challenges associated with their implementation, such as time demands, the level of parental involvement, and teacher preparation. Based on available research, the presentation outlines best practices for effectively organizing these conferences and formulates a potential research gap.

In conclusion, it is recommended to view three-way conferences not merely as occasional events but as a systematic component of the educational process, providing a structured space for continuous reflection and feedback. This approach aligns with modern pedagogical trends emphasizing formative assessment and student-centered learning.

Keywords: three-way conferences, student influence, self-reflection.

Exploring the impact of design thinking within STEM education on developing creativity and design competencies in secondary education students

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In contemporary society, characterised by its rapid evolution, educating competent citizens capable of analyzing, questioning, and shaping their environment is crucial. To achieve this goal, STEM education has been shown to be a powerful tool that encourages problem-solving through interdisciplinary collaboration, active methodologies, and real-world applications (Pacione, 2010; Wan et al., 2023). It promotes sustainability, diversity, gender perspectives, and Responsible Research and Innovation (RRI) (Couso, 2017). However, some other competencies, such as a human-centered approach, reasoning, process management, or empathy, could reinforce learning processes and also contribute to the development of 21st-century skills (Rusmann & Ejsing-Duun, 2022). It is therefore argued that engineering design processes and design thinking could play an integral role in enriching STEM education.

The present doctoral research aims to explore the impact of design thinking, as a methodology, within STEM education, on developing creativity and design competencies in secondary education students, even if it is in its early stages. Despite existing research in these fields, challenges remain. The impact of interdisciplinary STEM education on creativity and design competencies requires further study. Key areas for future research include expanding research across different contexts, moving beyond self-assessments, and investigating the role of teamwork in fostering creativity. Additionally, it would be worthwhile to explore the correlation between design competencies disposition and the development of creativity in students.

Creativity and design competencies will equip students with the skills to address future challenges and integrating with STEM education will contribute to the achievement of innovative solutions aligned with sustainability. Furthermore, exploring novel strategic methodologies is imperative for educators to enhance their knowledge and skill sets. This research is expected to contribute to the enrichment of STEM education, the training of creative designers and socially responsible global citizens, and the nurturing of the supply of teacher training with new pedagogical practices.

Keywords: STEM education, Design Thinking/competencies, and Creativity.

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Whole Teacher Education as a Holistic Approach to Teacher Shortages

Laura Taylor

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This abstract is being submitted for the Doctoral Consortium. I am a second-year PhD student in the Department of Integrated Studies in Education at McGill University. I will discuss my current research on teacher education, specifically focusing on the emotional dimensions of the teaching profession. Teacher shortages are a substantial issue across Canada. Teacher disengagement impacts not only instructional quality but also overall school climate and student outcomes. Exploring the intricate emotional and affective aspects that significantly influence teachers' disengagement experiences is vital.

The oral presentation will introduce the concept of emotional labour and its impact on teachers' work. My research employs narrative and arts-based methods to analyze teachers' stories and experiences with emotional labour, providing deeper insight into the emotional dimensions teachers encounter daily. My research aims to create training and teaching strategies that help teachers deal with the emotional labour in the teaching profession. A specific outcome of this research will be workshops designed to help pre-service teachers cope with emotional labour. In addition, workshops will be curated for teachers with all levels of experience, and specific interventions will be provided to assist teachers.

By considering disengagement and its correlation to emotional labour, this research will expand the conversation beyond traditional narratives and advocate for more holistic, sustainable approaches to fostering teacher well-being and retention. Whole teacher education recognizes the value of teachers' emotions.

Keywords: Teacher Well-being, Whole Teacher Education, Emotional Labour.

Students monitoring in digital learning environments: insights from a needs analysis of Lithuanian general education teachers

Kamile Kesyle
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Digital technologies are transforming human communication and shaping new life habits. It is predicted that over the next decade, approximately two-thirds of general education school students will learn in environments fully or partially supported by digital technologies. Lithuania's education sector is no exception. A key aspect of the 2021–2030 Lithuanian Education Development Programme pertains to the integration of e-learning tools and virtual learning environments into general education schools. Furthermore, the updated Lithuanian Teacher Training Regulations (2024) emphasize the importance of teachers' ability to facilitate learning not only in physical classrooms but also in virtual or hybrid learning environments. However, it is essential to acknowledge that learning in physical and virtual spaces differs significantly. Virtual learning environments allow students to engage with learning materials despite of location and at their own pace whereas physical classrooms provide a structured environment that fosters direct interaction between teachers and students. Notably, the differences between physical and virtual learning environments extend beyond the organisation of the educational process and student-teacher interactions; they also encompass student monitoring process. In physical classrooms, monitoring typically involves direct observation by teachers. Conversely, monitoring in virtual learning environments relies on learning analytics and digital tools to track student engagement and performance. Teachers' ability to monitor students in a physical classroom requires a high level of observational and interpersonal skills whereas student monitoring in virtual learning environments necessitates a proficiency in data analysis and adaptive teaching strategies. This study employs a design-based research methodology to systematically develop and refine a student monitoring framework tailored to virtual learning environments. The first phase of the research involved a needs assessment of 10 Lithuanian teachers working in general education schools with prior experience in conducting classes in virtual learning environments. This presentation will discuss findings from the first phase, highlighting teachers' perspectives on students monitoring and considerations for future development of an enhanced students monitoring framework.

Keywords: monitoring, virtual learning environments, general education.

"Un futuro dal cuore antico": the study of classical languages from the grammatical-translation method to the *Action-oriented approach*

Carola Siciliano
University of Catania, Italy

This research presents a critical methodological reflection regards to teachers of classical languages, exploring theoretical and practical models within the European context to address the gradual marginalization suffered by latin and greek. The analysis is grounded in two key documents published by the Council of Europe: *the European Recommendation on Key Competences for Lifelong Learning* (2006, updated in 2018) and the *Common European Framework of Reference for Languages: Companion Volume* (2018). Despite not being recent, these texts offer new perspectives even for the study of classical languages, as there remains limited awareness of the connection between the development of key competences and the study of Latin and Greek at the secondary school. The Companion Volume introduces the concept of mediation, emphasizing the social dimension of language learning and advocating for an action-oriented approach, where learners are social agents, actively contributing to the co-construction of the meaning of what they learn. The aim of this perspective is not only to revitalize student interest in studying latin and greek but also to make these subjects more inclusive, particularly for students with Special Educational Needs (SEN), which currently feels them to be not very accessible. Traditionally, Latin and Greek have been taught using a distinct approach compared to modern foreign languages, differing in epistemological status, teaching and evaluation methods. The contribution aims to propose the possibility of a more current study of the classical world, linked to the future of students' identity and their role in society through a critical review of theoretical and empirical research, the analysis of current trends and the examination of relevant educational theories.

Keywords: Teaching, High-School, Classics.

Bridging Global (Gen)AI Competencies and Contextual Practices: Cultivating Ethical Digital Citizenship in Higher Education

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Artificial Intelligence (AI), especially Generative AI (GenAI), is transforming education by creating new opportunities as well as ethical challenges. In Higher Education (HE), the integration of GenAI raises significant issues around privacy, equity, academic integrity, and the necessity for ethical frameworks. UNESCO's AI Competency Framework for Students (AI CFS) serves as a global reference for nurturing responsible digital citizenship. This research aims to explore how the AI CFS can be effectively contextualized within HE curricula to encourage ethical and responsible AI use among university students.

The study utilizes a participatory and polycentric approach within two culturally diverse institutions: Radboud University in the Netherlands and the University of Verona in Italy. A mixed-method research design is implemented, consisting of two phases. The first phase involves a systematic literature review and a phenomenological study, examining students' current usage of GenAI and their ethical perceptions through surveys and semi-structured interviews. The second phase designs course activities that align student experiences with the goals of the AI CFS, evaluated using pre- and posttests based on Kirkpatrick's model.

Preliminary findings reveal that 87% of Radboud University students utilize GenAI academically, although most regard their understanding of ethical AI and human-centered design as moderate at best. The study aims to foster digital citizenship by connecting global GenAI competencies with local educational practices, anticipating outcomes such as contextual guidelines, best practices, and refinements to the AI CFS.

The research underscores the importance of culture, education, and ethical considerations in promoting responsible GenAI adoption in the post-digital era. By integrating contextualized practices and enhancing critical judgment, it envisions a future where education empowers students to collaboratively create sustainable and inclusive societies within an AI-enhanced landscape.

Keywords: (Gen)AI, Citizenship, Higher Education.

Evolutive flipped learning: advancing personalization through Artificial Intelligence

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Personalizing learning remains one of the major challenges in the educational field, despite the advances achieved in recent years with various technopedagogical models. In this paper, we explore how the Flipped Learning model, combined with Artificial Intelligence (AI) techniques, can bring us closer to a more personalized and effective approach to learning. To achieve this, we have carried out a mixed methodology that integrates qualitative and quantitative approaches. In the first phase, we conducted qualitative research to identify the strengths and limitations of Flipped Learning. Based on these findings, we developed a theoretical model based on the Methodology of Designing Educational Conceptual Models, which serves as the basis for the next stage: quantitative research aimed at evaluating the effectiveness of the new model and proposing improvements if necessary. Currently, we are in the theoretical phase of the research. Our ultimate goal is to implement this innovative model to offer truly personalized learning experiences. We believe that this approach will not only optimize educational processes but also improve various emotional and academic elements of students. This study contributes to the field of education by providing a solid theoretical framework for the integration of AI in Flipped Learning, laying the groundwork for future practical applications. Among the expected results are greater personalization of learning, a theoretical contextualization of the Flipped Learning model, and the potential development of technological tools that transform the way students interact with educational content.

Keywords: Flipped Learning, Artificial Intelligence, Flipped Learning Evolution.

The Impact of "Dark Patterns" on Digital Platforms: A Case Study with Brazilian Young Students

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This research investigates the impact of "dark patterns" on digital platforms, focusing on Brazilian young students. Dark patterns are deceptive design techniques that manipulate users into making unintended decisions, often leading to addiction and other negative consequences. The study aims to analyze how these patterns contribute to social media addiction among young students and propose educational strategies to promote healthier digital habits. The research is grounded in the increasing use of the internet in Brazil, where young people spend an average of 9 hours and 13 minutes online per day. The study will use a mixed-methods approach, including literature reviews, semi-structured interviews, and questionnaires, to collect data from students, families, and educators. The results will help identify the ethical, educational, and psychological implications of digital addiction and suggest strategies to promote responsible use of digital platforms. The research is relevant due to growing concerns about the adverse effects of digital addiction on young people's mental health, academic performance, and overall well-being.

Keywords: Dark Patterns, Digital Addiction, Youth Behavior.

Self-assessment of primary and lower secondary school students and its effects

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In educational systems based on a learner-centered approach, formative assessment has become a focal point of interest, positively influencing the learning process and student outcomes. While researchers have widely studied formative assessment, one of its key components—student self-assessment—has received comparatively less research attention. In education that focuses on developing students' key competencies, emphasizes a partnership-based approach, and aims to foster lifelong learning, self-assessment is a significant element.

In my doctoral research, I specifically examine students' self-assessment skills in relation to intrinsic motivation and self-regulated learning at the primary school level. The findings of our systematic review indicate that the effect of self-assessment in primary education has not been extensively explored. However, its effects are far-reaching and offer numerous opportunities for further research. Our study identified twenty-three effects, which can be categorized into effects on the learning process and outcomes, students' personal development, and key competencies.

Currently, I am working on the adaptation of questionnaires. The paper will present the process of adapting the SaPS instrument, which focuses on the level of self-assessment skills. Additionally, there will be a discussion on the potential use of instruments measuring intrinsic motivation and self-regulated learning in young-age students.

Keywords: self-assessment, learning process, quantitative research.

Promoting Democratic Engagement through Higher Education: A Study on Youth and CDC in Andorra

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The democratic participation of young people is an important sign of how healthy a democracy is. In Andorra, data shows that many young people do not vote, which points to a deeper problem: a weak democratic culture, low sense of collective belonging, and little trust in institutions. This issue goes beyond the act of voting itself and reflects a broader civic disconnection. When young people are not raised within a strong democratic environment, it becomes harder for them to feel part of society, which may lead to apathy, disinterest, or even rejection of public institutions.

In this context, helping young people develop democratic values, attitudes, and skills becomes essential. Universities, as spaces for personal and critical development, can play a key role in reversing this trend. This research not only aims to describe the problem but also to contribute to the solution by promoting the Competence for Democratic Culture (CDC) in higher education in Andorra.

The study has two main goals: first, to explore how existing literature explains the causes of low youth participation and their connection with CDC; and second, to propose concrete ways for universities to foster democratic culture and civic engagement. The empirical part of the project will gather information about how students perceive democracy, participation, and their role as citizens. These insights will support the design of educational strategies that strengthen democratic competences and promote meaningful engagement among university students.

Keywords: Heritage education, cultural identity, civic engagement.

Facilitating Teachers' Intercultural Competence Development through Structured Erasmus+ Programmes: Opportunities and Challenges in Educational Mobility

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Intercultural competence (IC) is a crucial skill in an increasingly globalised world, and one that is also of particular relevance in today's classrooms. Research shows that teachers need intercultural competence to support students in culturally diverse classrooms and create equal educational opportunities. The Erasmus+ programme offers teachers mobility opportunities to develop this competence. However, there is a lack of empirical research that examines the extent to which Erasmus+ programmes – including those coordinated by consortia – support the development of intercultural competence in teachers. This study investigates how programme design, institutional structures and mobility experiences impact the development of intercultural competence in teachers in different (European) contexts. To this end, a mixed-methods approach is used, combining quantitative assessments before and after mobility using the Intercultural Development Inventory (IDI) with qualitative data from semi-structured interviews, reflection journals and programme evaluations. The study applies Deardorff's Pyramid Model of Intercultural Competence and Byram's Intercultural Communicative Competence (ICC) framework to determine whether the Erasmus+ coordinated programmes align with the theoretical frameworks or if there are practical gaps.

The results will focus on:

The usefulness of the Erasmus+ coordinated programmes for improving teachers' intercultural competence compared to non-coordinated programmes.

The role of institutional factors such as pre-mobility preparation, mentoring and follow-up in determining teachers' outcomes.

Comparative findings: how the findings compare or contrast with existing European research on teacher mobility and intercultural competence.

It aims to be a constructive attempt to enhance the strategy and design of the Erasmus+ programme to support mobility experiences that lead to genuine intercultural learning for teachers.

Keywords: Teacher Education, Intercultural Competence, Teacher Mobility.

Symposium 1:

Digital Sustainable Ecosystems in Education (DSEE)

Towards a sustainable digital educational ecosystem: a conceptual model

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The Sustainable Digital Ecosystem in Education (EDSSE) is a research proposal aimed at generating new knowledge about teaching-learning processes in educational contexts. Aligned with the field of Educational Sciences and the Sustainable Development Goals (SDG4 and SDG5), EDSSE seeks to promote inclusive, equitable, and quality education, reducing the digital divide and fostering the acquisition of digital competencies (DC) among teachers and students.

The project is based on the Territorial Cooperation Program #CompDigEdu (2021-2024), which sets goals for certifying teachers' DC and integrating digital strategies in educational institutions. However, technological provision and training have been insufficient to effectively transform teaching practices. In this regard, EDSSE adopts an ecosystemic vision, based on Activity Theory, allowing for the analysis of interactions between educational agents, technology, and context, thus facilitating the development of sustainable and contextualized strategies.

Previous studies, such as Observ@COMDID and MindGAP, have highlighted the need to advance personalized digital learning and teacher training beyond an instrumental approach. Through a qualitative methodological approach, EDSSE proposes designing guides, models, and training resources that encourage the effective use of Digital Technologies (DT) in education. Additionally, it will analyze the relationship between teachers' and students' DC at different educational levels, identifying exemplary practices and characterizing digital inequalities. Finally, the project will test the EDSSE model in pilot schools to assess its feasibility and transferability, thereby contributing to the improvement of the educational system and the reduction of digital divides through a sustainable and inclusive approach.

Sustainable Learning Spaces

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The educational space, whether by action or omission, is not a neutral agent in the learning process. For this reason, the conditioning factors of its design should consider this influence that includes both environmental (container) and organizational (content) aspects.

Factors such as location, environmental conditions, furniture organisation and technological integration have an impact on pedagogical development. Several studies have shown that spaces with large windows (natural light and views), far away from active noise sources (quiet environments) and with few thermal contrasts throughout the day (insulation and thermal control) facilitate learning. (Barrett et al. 2015).

The design of the educational space, therefore, actively influences learning, whether it has been thought coherently with the pedagogical practice or not.

Thinking about space from its architectural definition only takes into consideration the building and its physical relationship with the site, obviating what happens in it. In order to obtain the global conception, it is also necessary to consider the experience of those who inhabit the space, the educational community that should be an active part of the design process.

This community organizes the architectural space through devices, such as furniture, objects and technology, which become facilitators of learning. The more flexibility and versatility these devices have, the better they adapt to the functionality required in each scenario. For example, sliding doors or movable walls that allow the connection of different spaces or furniture adapted and accessible according to the age of the students.

When the design of the educational space takes into account the characteristics of the continent (architectural definition) and the experience of its inhabitants (educational community), it functions as a true catalyst for the learning process.

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Best educational practices with DT: analysis and evidence

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The presentation of a best educational practice that integrates digital technologies (DT), regardless of the level or knowledge area, should not focus exclusively on DT as the central axis. It is essential to integrate other key elements of the teaching-learning (T-L) process, such as the learning object, the subjects involved, the rules governing the activity, the educational community, and the division of pedagogical work. These components, defined within the framework of Activity Theory (AT) (Engeström, 2001), facilitate a dialectical approach to the dynamic interactions between system elements. This approach not only aids in understanding these interactions but also in identifying resistances, contradictions, and tensions, allowing for their resolution to achieve educational objectives (Grimalt-Álvaro, 2015).

From this perspective, an effective digital ecosystem, according to Gisbert & Lázaro-Cantabrana (2020), requires a new vision about the integration of DT into educational processes, institutional organization, and the participation of educational stakeholders. Nevertheless, studies analyzing educational practices with DT, such as those by Coll et al. (2023), indicate that the analysis of these practices tends to focus on student satisfaction and the usability of digital tools, without delving into their impact on academic performance. Additionally, recent research highlights the need for rigorous planning and evaluation systems that can measure learning effectiveness and foster student autonomy (De Vincenzi et al., 2023).

Given the lack of clear and transferable evidence on educational practices with DT, an observation guide with 14 measurable indicators is proposed. This guide is applicable in educational contexts from early childhood to higher education, with the aim of analyzing educational practices with DT based on the principles of AT and from an ecosystemic approach.

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Co-creation of Sustainable Learning Spaces: An Interdisciplinary Experience of Educational Innovation

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This teaching innovation project at Rovira i Virgili University has enabled the co-creation of sustainable learning spaces through an interdisciplinary experience between the education and architecture degrees. Through a collaborative work strategy, students have designed an educational centre based on the Waldorf pedagogical model, integrating pedagogical, technological and architectural dimensions.

This experience has demonstrated the value of collaborative design in the transformation of learning spaces, highlighting the importance of considering educational scenarios as ecosystems that influence teaching, learning and the well-being of students. In addition, the construction of a common language between disciplines has been favoured, facilitating the integration of knowledge in a process of situated and meaningful learning.

Students have stepped out of their comfort zone, facing the challenges of their future professional realities. Education students have developed a deeper understanding of the influence of the physical environment on teaching, while architecture students have explored how their designs impact on pedagogical processes. This exchange of perspectives has led to more holistic and applied learning, strengthening key competencies such as problem solving, creativity and interdisciplinary communication.

The experience has shown the importance of student engagement in educational innovation projects. The high level of participation and positive feedback from students reinforces the idea that authentic learning, based on real challenges, fosters a higher degree of involvement and motivation. In short, this initiative has not only generated innovative proposals for sustainable educational spaces, but has also transformed the way students perceive and apply their knowledge in real contexts.

Observatory on digital competence in education: Educating citizens for the digital and global era

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In the past two decades, both the national government and regional authorities have promoted programs aimed at providing technological resources to early childhood, primary, and secondary education centers. These initiatives have primarily focused on improving connectivity and updating the digital tools and resources used in classrooms. Although these efforts have had a significant impact, they do not ensure that teachers have developed an adequate level of Digital Teaching Competence (DTC) to effectively integrate these resources into teaching and learning processes or into their own professional development.

DTC encompasses a set of skills, abilities, and attitudes that enable teachers to use digital technology (DT) effectively in their professional practice and in their own learning (Lázaro-Cantabrana et al., 2019; Verdú-Pina et al., 2023). This competence goes beyond merely knowing how to use technology—it involves the ability to leverage it to enhance teaching and learning, foster students' digital competence and carry out all professional and personal tasks responsibly and effectively. Furthermore, there is still insufficient evidence regarding the extent of teachers' DTC development and its practical implementation in daily teaching.

This context gave rise to the ObservaComdid project (Ref. RTI2018-096815-B-I00), which led to the creation of an observatory for the digital competence of in-service and pre-service teachers. The findings of ObservaComdid supported the development of the Digital Competence in Education Observatory (OCodE, Ref. PDC2022-133436-I00), with the aim of establishing a sustainable and operational platform over time. This observatory seeks to improve and integrate existing questionnaires to continuously feed the system, implement a robust data analysis architecture, and offer tailored solutions for teacher training and guidance.

The overarching goal of both projects is to enhance teachers' DTC and their use of DT in educational practice, fostering continuous professional development aligned with the core competencies of the 21st century. Ultimately, this will contribute to equipping students with the necessary skills to actively participate in an increasingly digital society.

Keywords: Digital teaching competence, Digital technology, Teacher training, Educational observatory, Digital transformation.

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Symposium 2:

Teacher Academy Project-Teaching Sustainability: Teacher Education for Sustainable Futures

Teacher Academy Project-Teaching Sustainability: transdisciplinary teacher education for sustainable futures

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Global sustainability challenges necessitate new ways of seeing, thinking and acting in the world and education has a fundamental role in the transition to more sustainable futures (Sterling, 2001; UNESCO, 2020). Educational transformation is needed for education to fulfil its potential as a catalyst for sustainability (Orr, 2004) and this raises particular challenges for teacher education. These include: 1) the transformation of educators' mindsets to be more "inclusive, discriminating, open, reflective and emotionally able to change" (Mezirow 2008, p.93); and 2) the transformation of individual and collective educational practices, processes and structures (Kondratjuk, 2023). Transdisciplinarity is an important driver for educational transformation (Mittelstraß, 2002), and refers to approaches and processes which occur between, across and beyond traditional academic and social boundaries, including academic disciplines, but also professions, cultures, groups, fields of action, social worlds, nations, and media (Kondratjuk, 2023).

This symposium reflects on the Erasmus + Teacher Academy Project –Teaching Sustainability (TAP-TS) as a transdisciplinary teacher education project. As one of the inaugural Teacher Academies (2022-2025) TAP-TS aims to strengthen the sustainability competencies of European educators across disciplinary, institutional and national boundaries during online, hybrid and face-to-face professional learning events and in the co-creation of sustainability education resources (Learning Teaching Packages, LTPs) for schools and for teacher education on a range of cross-cutting educational themes. In this first paper, we present an overview of TAP-TS, including partners and participants and aims, objectives, activities and outputs. We draw on project evaluation data to consider the extent to which TAP-TS has fostered transformative learning and the transformation of educational practices, formats and structures. The following three papers each provide theoretical and practical insights into a particular 'Learning Teaching Package', which we propose as examples of transdisciplinary teacher education.

Keywords: teacher education, sustainability, transdisciplinary.

Sustainability and Digitality: Content and Approaches to Teaching Sustainability through Media Education

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We live in digitality or post-digitality (Murray 2020; Stalder 2019). We also live in a time when a more sustainable life and society is needed (Klein 2019). The convergence of sustainability education and digital media presents both opportunities and challenges for teaching methodologies. Digital technologies offer powerful tools to engage students, promote collaborative learning, and visualize complex sustainability issues, however at the same time they also bring negative implications for more sustainability (Lange & Santarius 2018). The fact that the connection between digitality and sustainability should be a central topic in the educational context and especially in schools has already been outlined (e. g. Grünberger & Szucsich 2021) with an argument for more media education as opposed to more media use (Kminek & Bonnes, 2024). The question is how?

Based on the experiences of developing LTP Digitality and Sustainability within the framework of the Erasmus+ project 'Teaching Academy Project – Teaching Sustainability (TAP-TS)', the fourth paper will discuss innovative pedagogical approaches with close orientation on ESD media educational approaches (Kminek & Bonnes, 2024). These include the approaches that promote reflexive and critical engagement with the environment and technology, and thus lead to transformation of self-and world-relations which is a central prerequisite for sustainable behaviour (Rieckmann 2021). The examples range from approaches to bring understanding about ecological, economic and social challenges the digital world poses from a global perspective, deconstructing digital devices and the idea of rewilding technology (Macgilchrist 2021), to future workshops that raise questions oriented to issues of Artificial Intelligence (Crawford 2021), (discriminating) Data (Chun 2015), and Robotics.

Thus, the paper provides insights into the LTP on Digitality and Sustainability focusing on a pedagogical-practical field, and discusses the opportunities and challenges of integrating such learning and teaching resources and approaches at primary level.

Keywords: Digitality, sustainability, media education.

Linguistically and culturally responsive pedagogy for sustainable futures: connecting transdisciplinary agendas for transformative teacher education

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Linguistically and culturally responsive pedagogy (LCRP) and education for sustainable futures (ESF) are often treated as distinct fields of research and practice. However, commonalities between them have important implications for teacher education, which fosters values, assumptions and mindsets for more equitable and sustainable futures. LCRP and ESF are both concerned with the ways in which education is implicated in injustices and its potential to catalyse positive social change (UNESCO, 2021; Gay, 2018). As such, both LCRP and ESF have a transformative agenda, which we suggest may be strengthened by bringing them together in teacher education. ESF provides a compelling frame for LCRP, including a historical contextualisation of the monolingual habitus (Gogolin, 2013) in relation to European nation-building, colonisation and racism (McKinney & Christie, 2022) and the futures-oriented need for diverse ways of knowing, seeing and acting in the world to address sustainability challenges (Stein et al., 2020). Thus, engaging educators to critically consider hegemonic beliefs and practices around language and culture in education and explore alternatives may be a powerful driver for the transformative learning and pedagogical innovation necessary for socio-ecological justice (Lotz-Sisitka et al., 2016). This presentation draws on teacher education resources which connect LCRP and ESF, developed as part of the Learning and Teaching Package (LTP) "a sustainable Europe." Through a secondary analysis of project evaluation data and our own personal reflections, we consider how educators made sense of connections between these two transdisciplinary educational themes as part of TAP-TS, including the potential for transformative learning, and make recommendations for further research and practice in teacher education.

Keywords: language and culture responsive education, transformation, teacher education.

Empowering Future and In-Service Teacher through Learning & Teaching Package for Primary Schools

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Teacher Academy Project – Teaching Sustainability aims to engage educators with sustainability values, topics and pedagogical approaches, fostering an interdisciplinary and international community of practice, to enhance their skills for teaching sustainability. Through a series of online (workshops), hybrid (Active Learning Events) and face-to-face learning events (Summer and Autumn Schools), student teachers, teachers and teacher educators across Europe have contributed to pilot seven Learning and Teaching Packages (LTPs). The LTP Design Model emphasizes an activity-oriented approach that fosters collaborative knowledge building (Pischetola et al., 2023), while being "deeply reflective" and "values-driven" (Cavadas et al., 2023; Goodwin et al., 2023; Purdy et al., 2023).

This paper will highlight the development and monitoring process of the LTP Sustainability and Environmental Education for primary teachers, particularly focusing on the work developed during the Active Learning Events and within the context of initial teacher training conducted by one of the project partners – Santarém Polytechnic University.

The paper presents how this LTP is organized, based on one common theme: 'One Earth'. Within this theme, the LTP is organized into four units, each one aligns with the Sustainable Development Goals. In each unit, various educational resources and pedagogical approaches are presented to teachers to develop practices to foster primary school students' knowledge and essential competencies related to sustainability. The aim is to enable primary school students to take action on biodiversity protection, responsible use of water and energy through sustainable consumption.

The organization of the ALE and the moments provided to foster teachers' reflection and exchange of practices will be presented. Those moments were essentials to refine and improve the quality of the resources produced. Finally, student teachers' and in-service teachers' work and ideas presented and discussed during the monitoring process of the LTP proposals will be addressed.

Keywords: teacher education, environmental education, primary school.

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Symposium 3:

Societat Catalana de Pedagogia

Responsible and Sustainable Global World: The Case of SCP-IEC

Josep Serentill (Coord.)
Societat Catalana de Pedagogia

This symposium offers an opportunity to explore and reflect on the challenges and possibilities faced by professional teaching associations in a globalized cultural context. The Societat Catalana de Pedagogia (SCP-IEC) serves as a dynamic and visible example of how local educational organizations can balance international collaboration with the preservation of their cultural identity.

In today's world of constant exponential change, the SCP-IEC addresses the socioeconomic and cultural tensions between local and global trends by fostering responsible and sustainable educational practices. It actively engages in the co-creation of new programs and projects, ensuring that research, teacher training, and professional development remain at the forefront of educational advancement.

During this symposium, speakers will present examples and data to showcase various projects and research initiatives, incorporating students' voices, teachers' insights, and trainers' resources.

The Importance of Educational Spaces in Catalonia's Active Pedagogy

Jordi Vivancos (Coord.)
Societat Catalana de Pedagogia

Educational spaces are not just physical settings but active elements that shape learning methodologies. Catalonia has a strong tradition of educational environments designed to foster active pedagogy and meaningful learning.

A key example is Escola del Mar (Pere Vergés, 1922), which promoted an educational model based on maritime exploration and direct contact with nature. Similarly, Escola del Bosc (Rosa Sensat, 1914) emphasized outdoor learning, encouraging movement, observation, and hands-on discovery as essential to child development.

Beyond nature-based education, architecture has played a crucial role in collaborative learning spaces. During the Modernist era, artisan schools provided young craftsmen with hands-on training to create architectural masterpieces. These workshops embodied project-based learning and teamwork, principles still relevant today. L' Escola Massana (1929) was a benchmark for design and applied arts, encouraging creativity and experimentation. Similarly, Escola de la Llotja (1775) played a pivotal role in training artists and artisans, merging craftsmanship with innovation through practical, collaborative learning.

In the digital era, education in Catalonia has expanded through platforms like XTEC, which facilitate collaboration among educators, fostering innovation and international engagement. These virtual spaces enable the sharing of resources and methodologies, ensuring the continuous evolution of the Catalan educational system. From natural settings to digital platforms, these educational spaces highlight Catalonia's long-standing commitment to student-centered learning, creativity, and cooperation.

The Catalan Society of Pedagogy collaborates in several studies, projects and civil initiatives, helping institutions and citizen initiatives advance in informal education, to continue to shape an educational system that respects its past to blend tradition with modernity and ensures meaningful learning experiences.

Training, Innovation, and networking: The Impact of the Societat Catalana de Pedagogia in Shaping Education

Rosa de la Fuente (Coord.)
Societat Catalana de Pedagogia

This session offers several examples of how, in the field of training and collaboration, the Societat Catalana de Pedagogia (SCP) has been playing an active role in educational advocacy for the last 40 years. Committed to shaping the future while consolidating past achievements, the SCP continues to drive initiatives forward that foster innovation, collaboration, and knowledge dissemination. The SCP's ongoing efforts promote and share Catalan educational projects and research findings, ensuring their impact and accessibility. Among its key contributions was the publication of research projects, such as the Fem l'Escola Plurilingüe (FEP) project (2014-2022), which has explored multilingual education strategies and their implementation in schools.

Since 2023, the SCP has been developing a training initiative, the APLICA Project, to highlight the transformative role of Artificial Intelligence (AI) in education, emphasizing its ethical, responsible, and efficient use in the learning process. This initiative not only explores the risks and opportunities of AI in education, but also provides concrete classroom activities that enable students and teachers to critically engage with these technologies.

With a major focus on coordination with educational institutions and organizations, the SCP can also sustain and disseminate dynamic innovation, and enhance international collaboration. The SCP actively participates in various programs, projects, and congresses, working closely with renowned educational entities across Catalan-speaking regions. Notably, in partnership with the Department of Education of Catalonia, it co-organizes an International Education Congress for Catalan educators every two years (2022, 2024), reinforcing its commitment to global educational discourse.

Furthermore, the SCP is dedicated to teacher training for educational innovation, engaging in expert exchanges with the Col·legi de Llicenciats i Doctors de Catalunya and exploring emerging technologies such as artificial intelligence in education. Its collaborative efforts extend to ComConèixer-KBIP (Knowledge Building International Project), and partnerships with other cultural hubs like ODITE-Espiral, or local educational networks like Llibreria ONA, all of which contribute to expanding educational research and practice.

This wide collaboration serves as a platform to discuss ongoing educational initiatives and publications, share insights from SCP's collaborative projects, and explore strategies for fostering high-quality education through training, innovation, and international engagement.

Research in the Digital Age: Evidence-based Consensus, Ethics, and the Future of Knowledge

Antoni Portell (Coord.)
Societat Catalana de Pedagogia

The SCP is committed to evidence-based educational development, and it participates in research and data analysis to identify the strongest trends in education. In this conference we will present interesting insights and comparative data form 2024-2025, collected by the SCP. With real information from the field, we develop pedagogical orientations that employ training and networking to develop initiatives at the school level in Catalonia, and at universities in different territories (teacher training at the University of Balearic Islands, University of Andorra, etc).

By promoting an innovative and humanistic approach in the Digital Age, the SCP research can guide educational institutions in leveraging AI for information management and content creation to enhance educational technological development, in an ecosystem of consensual collective knowledge building. Its research collaboration projects facilitate data gathering, and support schools in adapting and transforming their educational projects according to their specific needs, ensuring meaningful integration of AI in pedagogical strategies:

- Prioritizing free and open-access AI tools, carefully tested for reliability and educational value, with RAG educational sources.
- Integrating the Sustainable Development Goals (SDGs) into the curriculum, fostering a socially responsible approach to AI applications in education.
- Following the Universal Design for Learning (UDL) framework, ensuring a personalized and inclusive learning experience for all students.
- Enhancing collaborative projects and collective dialogic learning to achieve common criteria by aligning AI with ethical and sustainable education.

Through research initiatives, support and non- formal training, the SCP-IEC continues to lead the way in pedagogical research, educational leadership, and institutional transformation, demonstrating how an action-research approach in investigation can be a valuable ally in shaping the future of global, responsible, and human-centered education.

Practical examples of the SCP's educational activities, resources and workshop with AI tools

Neus Lorenzo (Coord.)

Societat Catalana de Pedagogia

We wlil prepare team building activities with AI, to explore IA tools in education, beyond the traditional "detection of AI texts" and "plagiarism detection". The objective of these pedagogical resources to conduct activities to help educators to create personal and professional criteria on how to incorporate the AI in their classrooms, schools and projects. Final opinions and assessment will be gathered to build collective reflection on the session, and to offer a collaborative learning-by-doing final *Agreement on AI Education Guiding Principles*.

Parallel sessions (line 1):

Teacher education and pedagogical perspective in global education

Pre-Service Teachers as learners of formative assessment: reflections from practicum experiences

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Pre-service teachers' understanding and application of formative assessment (FA) play a critical role in developing their assessment literacy, which is essential for effective teaching and learning. This study examines pre-service teachers' reflections on the implementation of formative assessment strategies during their practicum experience. The research aimed to explore how engagement with FA strategies influenced their perceptions, awareness, and motivation to integrate these approaches into their teaching practices.

The study was conducted with pre-service teachers enrolled in the fourth year of an English language teacher education programme at a large university in Türkiye. Participants were selected through a convenience sampling technique. A mixed-methods approach was adopted, incorporating both quantitative and qualitative data collection tools. The Teacher Formative Assessment Perception Scale (TFAPS) was used to measure pre-service teachers' perceptions of FA, while qualitative data were gathered through the analysis of lesson plans and practicum observation notes. These methods provided a comprehensive understanding of how pre-service teachers conceptualized and implemented FA strategies in real classroom settings.

The findings revealed that pre-service teachers' awareness and motivation to use formative assessment strategies increased over the practicum period. As they observed positive student responses to FA strategies, such as increased engagement and motivation, they became more confident in their ability to implement these techniques effectively. The study highlights the significance of authentic classroom experiences in shaping pre-service teachers' assessment literacy and underscores the need for more structured opportunities to engage with formative assessment during teacher education programmes. The findings contribute to the ongoing discussion on the role of formative assessment in teacher education and suggest that integrating FA training into practicum experiences can better prepare future educators for responsive and student-centered teaching.

Keywords: formative assessment, pre-service teachers, practicum.

Promoting democratic values in schools: insights for supporting a whole-school approach to civic and citizenship education

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The whole-school approach represents a valuable framework for fostering global competence in teachers and students. It incorporates democratic values and principles into teaching practices, school governance, the overall school environment, and community engagement (Council of Europe, 2018ab). This study forms part of a broader Italian project aimed at promoting civic and citizenship education by cultivating democratic learning environments in the first cycle of education. Specifically, it seeks to evaluate, through an ex-ante mixed-method approach, how the whole-school approach is currently implemented in the participating schools located in Verona. The findings will inform the development of continuous professional development pathways for teachers, leveraging the Ricerca-Formazione approach (Asquini, 2019).

Conducted as a multi-perspective case study (Day et al., 2000), the evaluation examined classroom and school climate, student engagement, and civic education initiatives. Using framework analysis (Gale et al., 2013), the research identified strengths such as positive school and classroom environments, active civic education projects, and leadership involvement. However, it also highlighted challenges, including limited resources, low levels of student engagement, and difficulties with assessment. Opportunities were noted in the presence of existing community partnerships, while threats such as resistance to change and regulatory constraints remain significant barriers.

While many schools actively implement civic and citizenship education programs, student engagement—particularly in management and decision-making processes at both the classroom and school levels—remains underdeveloped. These findings emphasize the need for targeted interventions to enhance student participation and align whole-school practices with the broader objectives of global competence. The Ricerca-Formazione approach facilitates the creation of a support framework for educational innovation, grounded in evidence-based data and participatory, reflective processes. Together, these elements are expected to pave the way for achieving the project's objectives, fostering sustainable and meaningful advancements in teaching and learning practices.

Keywords: whole-school approach, civic and citizenship education, democratic values.

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Designing an Online Professional Development for Mathematics and Science Mentor Teachers

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Contrary to popular belief, being a good teacher does not make one an effective mentor (Ambrosetti, 2014). Mentor training can take a back seat due to factors such as a lack of systemic mentor training programs, geographical barriers, and time constraints. Online teacher professional development (PD) programs have emerged as a powerful tool to empower teachers (Collins & Liang, 2015). This presentation is part of a larger project to design and implement an online PD with two aspects for mathematics, physics, chemistry and biology mentor teachers: i)activities stemming from Mentoring for Area Specialized Teaching (MAST) model, ii)online features for interactive PD. The MAST model includes three dimensions: (1)Practicum Triad, (2)General Pedagogy, (3)Area Specialized Teaching. Case-based PD activities were developed based on the MAST model descriptive themes of effective mentoring. The second element of this mentoring PD is being online so that mentors can be free of time and location limitations.

This PD was designed as weekly online synchronous meetings for each discipline separately, where discussions focused on area-specific teaching. The participants (mathematics-11, physics-8, chemistry-11, biology-7) and the researchers as PD facilitators met for 10 weeks during Fall-2023. Zoom is used for online meetings, and NearPod as a presentation tool for group interaction. There were also Google Classroom and WhatsApp groups for continuing communication. Individual interviews with participants were conducted and analyzed to examine changes in their mentoring practices. Findings suggest increased area-specialised mentoring practices (third dimension). Mentors also expressed the effectiveness of case-based PD activities in addition to emphasizing the interaction

aspect of this online PD. According to Renninger et al. (2011), online PD that addresses the diverse needs and abilities of participants is effective in changing teachers' practices. During the presentation, sample PD activity will also be shared with findings from mentor teacher interviews.

Keywords: Mentoring, Science and Mathematics Education, Online Professional Development.

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Transforming Early Childhood Education: The Role of Professional Learning and Development in Supporting Vulnerable Children

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High-quality early childhood education and care (ECEC) is crucial for lifelong learning and development, especially for vulnerable children (Cloney et al., 2016; Fox & Geddes, 2016; Manning et al., 2017). The quality of children's experiences in educational settings is closely linked to the professional learning and development (PLD) of early childhood educators and teachers (ECETs) (Organisation for Economic Co-operation and Development, 2019; Togher & Fenech, 2020; Torii et al., 2017). In 2021, 22% of children in Australia were developmentally vulnerable in one or more domains, and 11.4% in two or more domains (Department of Education, 2022). ECETs are well-placed to support these children but often lack the necessary training and resources (Boyd et al., 2022). There is a critical need for specialised PLD (Roberts, 2015; Krakouer et al., 2017). However, defining ongoing learning and professionalism in early childhood remains a challenge (Alchin & Ledbrock, 2021; Havnes, 2018; Molla & Nolan, 2018).

This study employed a qualitative interpretive case study design (Creswell, 2013; Patton, 2014; Yin, 2012). Thirty-three ECETs completed online questionnaires, and nine participated in two semi-structured interviews and periodic written reflections. Data was thematically analysed and cross-checked for quality (Braun & Clarke, 2006; Nowell et al., 2017). The research used Bronfenbrenner's bio-ecological framework (Bronfenbrenner, 1986; Bronfenbrenner & Ceci, 1994), Bourdieu's concepts of capital, field, and habitus (Bourdieu, 1977), and an adapted professional learning framework (Australian Institute for Teaching and School Leadership, 2012).

The findings reveal a significant gap, showing that ECETs have not received adequate support through PLD and other systems to comprehend children's vulnerabilities and respond appropriately. A need for expanded and contextualised PLD opportunities for ECETs was identified. The exposed systematic problems extend beyond the study, requiring comprehensive policy changes.

Keywords: Vulnerable children, professional learning and development, reflections.

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Orientation to sexuality education in Teacher Education degrees in Australia

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Education about human sexuality is widely recognised as an important aspect of health promotion and prevention. The implications are multifaceted, ranging from individuals being able to take responsibility of their own sexual health and well-being to negotiating fulfilling relationships. Sexuality education is comprised of the physical, emotional, mental and psychological aspects of human sexuality. There is strong evidence that educational programs in comprehensive sexuality education lead to positive outcomes for children and young people. In this presentation, the trends in sexuality education among university teacher educators in Australia will be examined. Sexuality education curriculum studies in initial teacher education (ITE) has two distinct objectives. For pre-service teachers (PSTs), one of these objectives is to be acquainted with concepts of sexuality education and the second is to become familiar with the pedagogies of sexuality education. A further goal, which has received scant attention and yet is vital for pre-service teachers to understand, is being able to identify the prevailing sexuality discourses that underpin the concepts and pedagogies for sexuality education. From a survey conducted with 36 teacher educators from Australian universities, this presentation will examine the emergent themes from the survey data in teacher education. The authors will compare the areas relevant to sexuality education to 28 different sexuality education discourses falling under four orientations to education i.e., conservative, liberal, critical, or postmodern (Jones, 2011). These trends to sexuality education among tertiary educators will help characterise the prevailing discourses, including the presence or lack of certain orientations to sexuality education in the Australian ITE courses. The conclusions drawn in this presentation are likely to resonate with teacher educators in various locations across the globe. The authors will conclude with a discussion on the relevance of including certain sexuality education discourses in teacher education and their social impact.

Keywords: Comprehensive sexuality education, teacher education, health education.

Mathematics and Science Teacher Educators' Reflection on Effective Mentoring for Teaching Practicum

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The practicum experiences of preservice teachers (PST) are of critical importance to their professional development. Although there has been some research on various courses of the preservice teacher education programs, there is limited discussion for mentor teachers. There has been research focusing on mentor and PST interaction and Hudson and Skamp (2003) developed the Five-Factor Model (FFM) for mathematics/science teaching. The five factors are personal attributes, system requirements, pedagogical knowledge, modelling, and feedback. Yet, this model's limitation is the lack of focus on effective mentoring practices for area-specialized teaching. To develop a culturally responsive model for effective mentoring in area-specialized teaching, the authors formed a large research group to develop a mentoring model called *Mentoring for Area Specialized Teaching* (MAST). Science (N=25) and mathematics (N=15) teacher educators from Turkiye and other countries were reached out to determine the main tenets of effective mentoring practices by implementing the Delphi technique. In the first round, participants answered open-ended questions about mentoring. By employing inductive analysis, the researchers reached a three-factor schema of effective mentoring: Mentor Characteristics; Triad; and Mentoring in Practicum. The emphasis on mentor teachers' both personal attributes and pedagogical strengths along with feedback could be considered common aspects of the findings aligned with the FFM as the questions were prepared based on FFM. Mentoring practices on PST and the practicum system of the country also need to be addressed in a model for effective mentoring practices that need to be developed to elaborate on mentoring practices for mathematics/science teaching. In this presentation, the teacher educators' perspectives on effective mentoring practices for mathematics/science teaching which help build MAST will be presented.

Keywords: Mentoring, Science and Mathematics Education, Teaching Practicum.

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Mobile devices and future teachers: usage and awareness

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Some studies show that excessive screen time is associated with poorer health outcomes and addiction problems. In schools, the debate about the use of mobile phones continues, with divided opinions between banning them or integrating them as an educational tool. But, what do future teachers do and know about this issue? The objective of this study is 1) to identify the use that future teachers have of mobile devices and how they use it for entertainment and learning and 2) to diagnose the level of awareness about the effects of screen abuse on health. The study is conducted in two Catalan universities and five Latin American universities in the Faculties of Education. The methodology is quantitative with data gathered is through an *adhoc* questionnaire. The questionnaire has 4 sections. The first section is sociodemographic questions (gender, university and semester). The second section is related to the purpose of the use of smartphones, tablets and laptops. The third section is related to the perception of usefulness of the mobile devices (smartphones, tablets and laptops) for academic work. The fourth and last section is related to the awareness of the health risks of being exposed to screens for long periods of time.

The participation of the sample is totally voluntary, and they have been informed that their data will be anonymous and the use of it will only be for research purposes. The initial analyses suggest that preservice teachers spend more time scrolling than participating in social networks or creating content. Regarding the health awareness, they mostly agree (partially or totally) that mobile devices affects people's health (such as eyesight or muscular problems) and well-being (such as the sleep schedule disturbance or decreased physical activity).

The collection of the sample is in progress, and it is expected to be finished at May.

Keywords: mobile devices, health, academic usage.

Inclusive Teacher Agency. Some results of a National Exploratory Survey (Italy) carried out on the Specialization Courses for Educational Support Activities for Students with Disabilities

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The most recent orientations in school policies at national and international level highlight teachers as *agents of change*, able to shape and personalize their *inclusive teaching practices*, making an essential and decisive contribution to improving the quality of education and training for *everyone*. Analyzing the *agency of the inclusive teacher* allows us to recover the potential of the *professional action of the teacher in "situ-action"* within the school and extra-school context. For this reason, starting from the indications developed by the international document of the *European Agency for Development in Special Needs Education* in relation to the "*Profile of the inclusive teacher*", it was decided to develop an *exploratory primary survey research on original data*, which involved the students/teachers of the first and second level of the Specialization Courses for Educational Support Activities for Students with Disabilities of 6 Italian Universities (Catania, Rome "European University", Basilicata, Lecce "University of Salento", Milan "Catholic University of the Sacred Heart", Perugia), with the aim of investigating, through the administration of a *mixed method* questionnaire, the quality of the profile and professional skills of the inclusive teacher. In particular, in this contribution we will try to analyze the items inherent to the training processes of the *Teacher Agency* considering the "situated" interactions of the inclusive teaching practice.

Keywords: Teachers, Inclusion, Agency.

Appreciating and cultivating a growth mindset in teacher training

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Why is it important to promote a growth mindset in the training of new education professionals? Why does appreciating it improve teaching professional development? To what degree does the teacher's growth mindset improve self-learning? And the learning of your students?

Introduction: In 1987 David Cooperrider published together with Suresh Srivastva *Appreciative Inquiry in Organizational Life*. It is the first time that the term "appreciative inquiry" is linked to organizational development within the framework of the emerging current in the USA to rethink the way in which we relate to ourselves, to others and to our environment. In Cooperrider's own words, "Appreciative inquiry is a process of research in action in relation to what gives life to an organization, a community, but also to an individual and/or his linked group."

"Appreciating" therefore requires a set of principles to discover what gives us life at a micro level (as an education professional); at the meso level (as a team) and at the macro level (as a system, as an institution).

These principles are based on Kenneth Gergen's idea of social constructionism. In his book "*Relational being*" Gergen argues that the joint creation of knowledge is a relational creation, it is a creation of community construction. It is within this framework of social constructionism that he proposes a review of education in a relational key.

But the relational fact must allow a shared exchange for personal and professional development with a determined attitude that allows us to flourish and grow in all areas of our lives. Carol Dweck in her book "Mindset. The new psychology of success" invites us to reflect on our thought processes and our beliefs. He maintains that an attitude of overcoming our fears and limitations opens the doors to a growth mentality permeable to learning, self-knowledge and the cycle of continuous improvement.

Methodology: The proposed methodology is appreciative inquiry as a model based on the 5D's of the continuous improvement cycle proposed by David Cooperrider (Definition - Discover - Dream - Design - Destiny). Based on probing questions, we will create a space for shared conversation based on what we deeply believe.

Results: From the conversations in pairs or in small groups, we will address those common elements that generate a growth mindset to rethink them in the framework of the initial training of teachers but also in practice in the classroom of the educational center as a key element in pedagogical leadership.

Discussion: It is an integral part of the methodological proposal of appreciative inquiry based on conversations.

Metacognition: We will end with a metacognitive reflection based on what we have experienced from the proposal presented.

Keywords: appreciative inquiry, growth mindset, relational education.

Peace Perspectives for Primary School: Contributions from Lipman and Galtung

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The peace prospects for primary education, integrated through the theories of Johann Galtung and Matthew Lipman, can make a significant contribution to building a culture of peace. Galtung (2014), with his TRASCEND method, advocates for conflict transformation, arguing that peace is not only the absence of war but also the identification of non-violent alternatives to unjust social structures. In describing his model, Galtung stresses the importance of transcending conflicts in order to explore creative solutions that go beyond rigid dichotomies, fostering understanding of the Other's perspective to overcome selfishness and identify higher, inclusive goals (Galtung & Fischer, 2013; Galtung, 2014). Similarly, Lipman, through his Philosophy for Children approach, aims to promote critical, creative, and "caring" thinking, encouraging children to reflect on complex issues such as justice and coexistence (Lipman, 2003; Lipman, 2005; Massa, 2014; Mazzini, 2024). Specifically, Lipman believes that engaging with the philosophical dimension of experience, the critical exercise of thought, and addressing themes and problems that stimulate a search for knowledge are essential elements in any educational journey, beginning in primary school (Striano, 2000). This contribution aims to explore how integrating Galtung's and Lipman's models can foster the development of a culture of peace in primary schools, promoting relational and critical thinking skills from an early age. Through a comparative theoretical analysis, this study examines the fundamental principles of both approaches, aiming to identify potential educational strategies for the positive transformation of conflicts and the promotion of philosophical dialogue in educational practices. The proposed theoretical reflection has significant implications for teacher training, particularly in defining specific indicators related to peace education and the creation of inclusive learning environments.

Keywords: Philosophical dialogue, Peace education, Relational skills.

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Enhancing teaching review and improvement competence in early-career faculty: best practices from induction programs

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The competence of review and improvement in university teaching has been widely emphasized in recent literature. This competence encompasses professional learning processes, including self-evaluation, regulation, and teaching reflection, all within the framework of educational innovation and improvement. Such innovation must be supported by educational research, emphasizing the Scholarship of Teaching and Learning. Preparing university faculty, especially early-career educators, requires addressing the "reality shock", which arises from the gap between idealized teaching perceptions and the actual classroom experience. Understanding novice faculty needs is crucial for effective teaching strategies. This study explores the main training processes designed to enhance the review and improvement competence in early-career university faculty, focusing on best practices from induction programs. Using a qualitative approach, the study employs focus groups with program managers, novice educators, and trainers, conducting a thematic content analysis with deductive categorization. Findings highlight the importance of mentoring as a key strategy for guiding and supporting new faculty, with group mentoring emerging as an effective collaborative technique. Evaluating teaching performance and progress within mentoring is also crucial, allowing for structured feedback and refinement of classroom strategies. Participants suggest introducing pedagogical advisors to provide guidance, review faculty work, and offer diverse feedback. Reflective teaching is another key factor, enabling educators to reassess their methods, challenge preconceived beliefs, and base improvements on evidence. Participants suggest that this reflection should often be collective, fostering discussion and shared learning. Hence, faculty collegiality is essential for professional growth. Encouraging collaboration, classroom observations, and peer feedback strengthens a culture of continuous learning. Institutions should promote open, participatory spaces where faculty engage in joint reflection and pedagogical development. Ultimately, fostering an open, participatory teaching environment supports innovation and professionalization. Overcoming resistance to change, ongoing teaching review should drive evidence-based improvement, with faculty engagement and attitude as key drivers of transformation.

Keywords: focus group, professional development, teaching induction.

Reforming Initial Secondary Teacher Education in Italy: Challenges and Opportunities

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Improving initial teacher education systems is a crucial issue for ensuring the availability of quality teachers and adequate learning opportunities (Tatto & Menter, 2019; Kowalczuk-Walędziak et al., 2019).

Italy, like other European countries, faces a shortage of qualified teachers, particularly in certain regions and subject areas, while in others, there is even a surplus of candidates (Flores & Craig, 2023; Smith, 2023; Magni, 2024). A comprehensive reform of initial teacher education in Italy has been waited for years, following several failed attempts over the past decade (Magni, 2019).

In this context, the implementation of the European programme Next Generation EU has provided Italy with an opportunity to undertake a thorough reform of the initial education system for secondary school teachers (Law no. 79/2022; Bertagna & Magni, 2022).

These reforms promote an innovative approach to teacher education by integrating pedagogical, didactic and psychological aspects, while emphasizing the pivotal role of Teaching and Learning Centres (TLCs) (Wright, 2023; EUA, 2024;). These new structures play an essential role in effectively implementing these reform perspectives, acting as "*boundary-crossing institutions*" (Engeström et al., 1995) with the task of linking theory and practice, university research and the realities of school life in a more profound way.

This paper provides an overview of the main features of the recent reform in initial teacher education in Italy, with a focus on strategies and policies aimed at attracting and retaining young, motivated, and qualified teachers. Drawing on the initial implementation phase of the reform it examines the interdisciplinary dimension of the new training courses and their integration with schools through placement opportunities (Heinz, 2024). Special attention is given to the objectives to be achieved, common pitfalls to avoid, and an evaluation of the strengths and weaknesses of this innovative model after its first year of implementation.

Keywords: Teacher Education, Education system, Italy.

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Democratic Education and Teacher Training: an Analysis from Pedagogical Thinking

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This article analyzes the evolution of the concept of democratic education and its impact on teacher education, examining the influence of key thinkers from the 18th century to the present. Based on the findings of their doctoral thesis on competence of democratic culture in higher education (Gili, 2024), this research investigates how teacher education can serve as a driving force to ensure the transmission of democratic values and promote a critical, participatory, and socially committed citizenry. To achieve this, it is essential to have well-prepared teachers, capable of integrating democratic principles into their pedagogical practice and responding to the needs of contemporary society (Ortega, 2016).

The study reviews the contributions of Rousseau, who conceives education as a process of self-discovery; De Condorcet, who presents it as a fundamental right for citizen emancipation; Freire, who understands it as a tool for empowering the oppressed; Giroux, who emphasizes the need to educate citizens; and Apple, who examines the relationship between education and power structures. Drawing on these perspectives, the study explores the evolution of their idees across different historical contexts and their relevance in today's educational landscape.

Furthermore, the article provides a space for reflection on the applicability of these theories in contemporary educational policies and in the training of teachers capable of integrating democratic principles into their pedagogical practice. In a globalized world marked by social tensions and inequalities, ensuring inclusive, equitable and sustainable education is essential for strengthening democracy. Through a conceptual analysis and a critical review of the literature, it is argued that democratic education not only contributes to the formation of responsible citizens committed to democratic values, but also serves as a cornerstone for the construction of fairer and more cohesive societies.

Keywords: democratic education, teacher education, pedagogy.

EENTITLE: Advancing the Professional Development and Inclusive Recognition of Engineering Educators in Ecuador through Global Standards

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EENTITLE (Ecuadorian ENgineering educaTors capacITy deveLopment and rEcognition) is an initiative funded by the Erasmus+ Capacity Building in Higher Education (CBHE) program of the European Union, aimed at strengthening higher education in third countries not associated to the program. It is part of the ERASMUS-EDU-2023-CBHE-STRAND-3 topic, which seeks to modernize, internationalize, and enhance access to higher education through multilateral cooperation.

The project aims at enhancing the teaching, assessment, and recognition mechanisms of engineering educators in Ecuador, aligning their competencies with international standards. To achieve this, it will implement Professional Development Programs (PDPs), establish guidelines for international accreditation, and support 400 educators in obtaining professional certification. Additionally, 100 experts will be trained to join the Monitoring Committee, ensuring a peer evaluation system based on objective criteria and evidence. EENTITLE also promotes equity, inclusion, and the social recognition of engineering educators, thus increasing their capacity and enabling them to gain international recognition.

The project consortium comprises European and Ecuadorian institutions. The Polytechnic Institute of Porto (IPP) leads the coordination, supported by TALTECH, UVIGO, and the ENTER network, which contribute expertise in teacher training and quality assurance. In Ecuador, ESPOL, UNEMI, UNLOJA, and ESPOCH implement the Capacity Development Centers (CDCs) and update the PDPs. CEDIA provides digital infrastructure support, while SENESCYT facilitates the integration of international standards into the national education system.

ESPOCH leads Work Package 7 (WP7), focused on the inclusive social recognition of engineering educators. It has worked with beneficiary institutions to define this concept and successfully secured the approval of an institutional policy on inclusive social recognition by the Polytechnic Council. Furthermore, it coordinates its implementation across all Ecuadorian universities in the consortium, ensuring that these strategies translate into concrete actions to enhance the prestige of engineering educators at both national and international levels.

Building a competency framework for teacher educators: a pending challenge

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While the importance of teachers in student learning is widely recognised, attention to those who train them has been, paradoxically, limited. Furthermore, research specifically focused on teacher educators during initial teacher education is sparse and fragmented. This gap hinders a clear understanding of their role, the identification of their needs, and the definition of an appropriate competency profile. Teacher educators, whether working in universities or schools, bear the responsibility of preparing future teachers by imparting essential knowledge, skills, and attitudes for educational practice. However, the lack of research on teacher educators has contributed to their relative invisibility, making it difficult to achieve societal and professional recognition for their role. This study, developed as part of a broader project1, aims to identify the most relevant competences for teacher educators to perform their role effectively, ultimately contributing to the construction of a professional profile. Using a qualitative methodology, a documentary analysis of 75 primary sources was conducted through deductive-inductive coding. The sampling was intentional, based on the inclusion criteria established by Sánchez-Tarazaga (2017) and grounded in the European Commission (2013). The results reveal that the key competencies required of an effective teacher educator are: the ability to teach, teaching how to teach, research skills, transversal competencies, leadership, collaboration, reflective practice, knowledge (both professional and practical), and mentoring. This competency framework will help clarify the role of teacher educators and inform the development of effective policies for their training, selection, and professional development.

Keywords: teacher educators, competences, initial teacher education.

What are the Implications of Teacher shortage for Teacher Education in Portugal?

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Like in other European countries, Portugal is facing the problem of teacher shortage. According to the official statistics, there will be a need to recruit over 34,000 teachers by 2030/2031 (an average of 3,450 per year). Mass retirement and the decrease in teaching candidates are two key factors that explain the lack of teachers. However, this is not a recent phenomenon as it has been identified in several documents at least since 2016. A report published by the National Council of Education in Portugal in 2016 reported the ageing of the teaching workforce and the lack of valorisation and attractiveness of the teaching profession. Later, in 2019, another report of the National Council for Education pointed to teaching as a profession marked by the ageing of the workforce (by 2030 more than half of the teachers will have retired) and to a decrease in the attractiveness of the profession (a reduction of about 50% in the number of teaching candidates from 2011/2012 to 2017/2018). More recently, in the annual "State of Education 2021", the National Council for Education in Portugal indicates that, in 2020/2021, 55% of the teaching workforce were 50 years old or above. In general, the crisis of teacher shortage in Portugal is clearly linked to the intertwined factors of the ageing of the teaching workforce and consequent retirement of a large number of teachers along with a decrease of teaching candidates. Such a critical scenario is associated with a set of reasons, amongst others, the lack of attractiveness of the teaching profession, challenging working conditions and the negative image of the profession in the media. In this paper, the crisis of the teacher shortage will be explored as well as the strategies to mitigate the problem and their implications for teacher education.

Keywords: Teacher Shortage, Teacher Education, Policy Development.

Analysis of Service-Learning as a Transformative Strategy in Initial Teacher Education for Embracing Diversity

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One of the current challenges in initial teacher education is ensuring that future educators develop the necessary skills to meet students' needs, celebrate diversity in the classroom, and overcome existing barriers to educational inclusion. At Universitat Jaume I (UJI) in Castellón, this approach is addressed in the course *Education for Diversity*, which focuses on the following competencies: (1) providing educational solutions to school situations, (2) understanding programs and creating materials to address students' needs, (3) tackling disciplinary problems, and (4) fostering cooperative learning. Although promoting a truly inclusive and collaborative culture among future teachers remains a challenge, one methodological strategy that supports this goal is Service-Learning (SL). This approach enables students to learn the course's theoretical content through direct engagement with an organization, facilitating analysis and planning actions to overcome barriers—practices aligned with the principles of inclusive education. This study examines the perceptions of students enrolled in the Primary Education degree program at UJI regarding their learning outcomes from SL in relation to education for diversity. Using a qualitative methodology, data were collected from 11 SL learning diaries completed by different groups of the students, which were analysed through documentary analysis. Preliminary findings highlight key aspects, such as the understanding of the concept of diversity, the analysis of existing barriers in the context, and the ability to plan strategies to overcome them. The main conclusions underscore the potential of SL as a methodology that facilitates the acquisition of essential competencies for teaching in diverse settings. Consequently, this study reaffirms the role of this methodological strategy in deconstructing ableist beliefs and transforming future teachers' perspectives to respond inclusively to diversity in classrooms.

Keywords: inclusive education, initial teacher education, service-learning.

Does Student-Centered Instruction Work? The Relationship Between Student-Centered Instruction and Academic Achievement: Variable-Centered and Person-Centered Approaches

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Student-centered instruction is widely advocated in global education, yet its direct impact on academic achievement remains unclear. This study aims to explore the effects of student-centered instruction, which includes differentiated instruction, independent inquiry, and group collaboration, on academic achievement from both variable-centered and individual-centered perspectives. Based on biological ecosystem theory and self-determination theory, the study also investigates the underlying mechanisms through which student-centered instruction influences academic performance. Data were collected from 14,551 eighth-grade students in the Southeast of China. Latent profile analysis (LPA)and Structural equation modeling were conducted using SPSS 23.0 and Mplus 8.0. The LPA revealed four subgroups of student-centered instruction: average teaching style (36.03%), supportive teaching style (26.41%), relatively controlling teaching style (28.81%), and most controlling teaching style (8.75%). The findings showed that student-centered instruction had a significant negative direct effect on academic achievement, but a significant positive indirect effect through teacher-student relationships and students' interest in learning. These results suggest that the value of student-centered teaching may not be directly reflected in academic performance, but rather in the improvement of external learning environments and non-cognitive factors, ultimately enhancing academic achievement.

Keywords: Student-centered instruction, Academic achievement, Latent profile analysis.

Rethinking Teacher Education in a Changing World

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The ways in which ITE is understood in a given context are associated with the importance attached to the teaching profession but also to the role of education in general, and of teachers in particular. A look at international literature is indicative of how policies related to ITE have been developed and what kinds of political options and priorities have been advocated in a given context. Of particular relevance is how the role of universities and schools in the education of (future) teachers is understood and what kinds of requirements are needed to become a teacher as well as how education in general and the role of the teacher in particular is framed. This paper addresses the current situation of ITE within the context of a teacher shortage as well as the future in this field. (Re)Thinking the future of ITE means moving beyond emergency responses, taking into account the expertise of teacher educators as well as investing in teacher educator development. There is a need to focus on structural elements of ITE and not only on situational aspects related to the current problem of teacher shortage. It is important to interrogate how the teacher's role is understood in ITE policies and to what extent teacher professionalism recognises the complexity of the teaching profession and its intellectual, ethical, relational, political and inquiry-based dimensions.

Keywords: Teacher education, Challenges, Teacher Shortage.

Teacher educators in European Union policy: a Visible or Invisible group?

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Teachers have been recognised as a pivotal factor in improving educational quality by researchers and international organisations alike, and as a decisive variable in students' learning and academic success. Despite the abundance of discussions surrounding the quality and preparation of teachers, attention to those who train them has, paradoxically, been limited. Indeed, their lack of visibility has led to them being referred to on occasion as "the hidden profession." This term refers to teacher educators, individuals who formally contribute to the learning and development of teachers during their initial training period. Moreover, the role of the European Union is becoming increasingly influential in shaping education policies across member states. For this reason, the aim of this research, conducted as part of a broader project1, is to identify and analyse the most relevant regulations concerning teacher educators in order to examine their role from a supranational perspective. To achieve this objective, a qualitative content analysis was carried out on documentation generated (including communications, recommendations, and working reports) between 2000 and 2024. The findings highlight the growing interest in teacher educators and acknowledge their importance in the educational process. However, their presence as a group in European educational policy remains limited. These outcomes may have practical implications, as educational policymakers should take this professional group into account, ensuring their work is both recognised and made visible.

Investigating character strengths and their supportive role in the teaching-learning environment: Insights for educators

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The extensive research on teacher education emphasises the holistic development of student teachers, encompassing social, emotional, and character growth. Integrating character strengths into educational practices is essential for fostering a positive learning environment at all levels of education and cultivating well-rounded, engaged citizens. Character strengths, defined as positive aspects of personality traits, facilitate the development of cognitive, emotional, interpersonal, civic, temperance, and transcendence strengths of the individuals and encourage the wellbeing of the society as a whole. However, there is limited empirical research on the prevalence of character strengths among Myanmar student teachers and the contribution of these strengths to the learning environment. This study investigates the distribution of character strengths and their implications for creating a supportive learning environment. The data were collected from 200 student teachers (M_{age} = 20.50, SD_{age} = 1.14) at an Education Degree College through simple random sampling. The study used the VIA-72 online questionnaire, translated into Burmese with input from psychological experts and linguistics, alongside qualitative responses from open-ended questions. Quantitative analysis using SPSS showed that participants most strongly identify with honesty, prudence, gratitude, kindness, and love. Qualitative responses established the links between specific character strengths and the supportive learning environment. The results provide practical insights for teacher educators aiming to create a more supportive learning environment by designing engaging activities that encourage character strengths. Furthermore, the identification of less prevalent strengths, such as love of learning and perspective, indicates areas where student teachers and teacher educators may benefit from additional support. It also reflects the effectiveness of various teaching methods, including group activities, reflective practices, and presentations, to motivate student teachers to remain active and engaged. This study contributes to the initial teacher education by highlighting the role of character strengths in creating a more inclusive, engaging, effective, and supportive learning environment.

Keywords: character strengths, supportive learning environment, student teachers, Myanmar.

'Am I just a number here?' Students' perspectives of effective teaching and learning practices within reform directed educational systems

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Widespread educational reform has emerged as consistent feature across education systems globally in recent years. Yet, in many contexts educational reform is frequently rudderless- devoid of a consistent and agreed purpose driving change. At the heart of such educational reforms, the role of the teacher is increasingly conflicted, with assessment led, standardised and delivery-oriented educational practices widely observed as efficient and effective responses to reform-based performative pressures. Amid growing concerns regarding teacher burnout and attrition within this milieu, the current study seeks to develop an understanding of students' perspectives of 'effective teaching', providing a roadmap for change and bolstering a wave of research focused on teachers' perspectives of their role. Premised on the conviction that student voice plays an important role in educational reform and can offer a practical agenda for change, this study explored the perceptions of 'good teaching' drawing on data from 90 post-primary student across five schools in Ireland. Creative drawings and interviews were employed to provide a rich and detailed understanding of student voices. This research identifies four superordinate themes which students noted as critical skills for effective teaching namely; affective proficiency, professionalism, enthusiasm and pedagogical expertise. The findings of this study underscore the importance of student voice as part of global educational reform, providing direction for teachers and policymakers alike in adopting responsive and reflective approaches to change.

Keywords: Student voice, effective teaching and learning, educational reform.

Teaching about and for Social Justice: Exploring the Implementation of Equity Literature Circles with Pre-Service Teachers

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Social justice, a significant component in the development of teachers' global competence, has become a core focus in teacher education programs (Adams, 2016; Egbo, 2019). However, the mandate of social justice in teacher education has been criticized as an undertheorized and vague concept that is too often disconnected from content-specific pedagogies (Goodwin & Darity, 2019). Scholars have argued that these criticisms are rooted in a false dichotomy that assumes that a focus on social justice somehow diminishes the importance of subject-area content knowledge and pedagogies, when in fact these two aims are interconnected and should be seamlessly explored through all coursework (Collins et al., 2019). To truly meet the goals of social justice in global education, we must consider the intersectionality (Crenshaw, 1991) of teachers' and students' multiple social markers of identity, including race, culture, language, ethnicity, gender, socioeconomic status, and (dis)ability (Heineke & Papola-Ellis, 2022; Pugach et al., 2019).

The current study, published in early 2025, sought to explore the impact of an Equity Literature Circles (ELC) framework within a literacy methods course in a teacher education program in western Canada. The ELC framework featured a curated collection of Young Adult (YA) novels, allowing pre-service teachers to explore themes related to global competence, including Indigenous worldviews, transgender identities, systemic racism, refugee experiences, hidden homelessness, and neurodiversity. Through the lens of participatory action research (PAR), researchers collected data from classroom artifacts, surveys, and focus group interviews to explore pre-service teachers' perceptions of the ELC framework. Findings from this research suggest that an ELC framework is a promising instructional strategy for enhancing pre-service and in-service teachers' understanding of their own and their future students' complex and intersecting aspects of identity and diversity, and of the important role of literacy instruction in teaching about and for social justice within multicultural classroom environments.

Keywords: identity, diversity, social justice.

School leaders' perceptions of work well-being, collective efficacy and the inclusion of students with disruptive behaviour in the classroom

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School leadership is widely recognized as a highly demanding role, with leaders frequently exhibiting symptoms linked to stress and burnout. The challenges inherent in their responsibilities often lead to excessive workloads, negatively impacting their personal and professional well-being. This study aimed to explore the relationship between school leaders' well-being at work, their perceptions of collective efficacy, and their beliefs regarding the inclusion of students with disruptive behaviour in the classroom. A total of 251 school leaders voluntarily participated in the study, comprising 25.5% men and 74.5% women, with leadership experience ranging from 0 to 40 years. Participants completed four questionnaires addressing the key topics of the research. Main findings indicated that leaders with greater well-being at work tend to have more positive perceptions of collective teacher effectiveness and the inclusion of students with disruptive behaviour. Overall, the results underscored the complexity of these interactions, revealing that school leaders' physical, mental, and occupational well-being is linked to their perceptions of collective efficacy and their beliefs about including students with disruptive behaviour in the classroom. The research reinforces the importance of promoting the well-being of school leaders for a more positive and inclusive educational environment. The findings also suggest the need for institutional strategies that support school leaders in managing stress and building effective inclusive practices. Future studies could delve deeper into the dynamics between well-being, collective efficacy and inclusion in different school contexts.

Keywords: School leadership, Work well-being, Disruptive behaviour.

Teacher Professional Development Programs in a Global STEAM Education: A Systematic Review

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This systematic review brings a point of view of a recent thematic for in-service teachers while analyses features, trends and quality indicators in Teacher Professional Development Programs (TPDPs) for STEAM (Science, Technology, Engineering, Arts and Mathematics) education from 2016 to 2024. Reviewing 24 studies according to PRISMA Guidelines, it highlights key aspects in theoretical background, pedagogical frameworks, teacher training strategies, activity designs, assessment domains/training effects, assessment tools, sustainability, and funding. Findings show that TPDPs in STEAM often adopt constructivist and interdisciplinary approaches, especially through Project-Based Learning and collaborative frameworks that promote integration through interdisciplinary and transdisciplinary approaches. Common teacher training strategies include hands-on workshops, support through communities of practice, and follow-up sessions to ensure sustained engagement. Assessments focus on teacher self-efficacy, instructional practices, and confidence in STEAM integration, with minimal emphasis on student outcomes. Sustainability is often enhanced through communities of practice, and funding is generally sourced from governmental and private entities. Program quality evaluation was based on the effectiveness of professional development. A framework that integrates the arts was adapted as an instrument. The review found strong adherence to principles like active learning and collaboration, though arts integration into sciences remains inconsistent. The analysis of arts content highlights a lack of improvement in its integration, suggesting a need for clearer frameworks and specialized research and training. This review supports improved understanding of TPDPs in STEAM and recommends future research to improve and explore arts integration and its role in programs quality. The topic is relevant for scholars, teachers, students, teacher trainers and stakeholders in order to face the needs and challenges of a global world including STEAM Education, in-service training and other relevant topics discussed here.

Keywords: STEAM Education, Teacher Professional Development, Arts Integration.

Teacher education in times of global dislocated complexity

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Introduction: There are many definitions of "Global Education" thus demonstrating what a contested and elusive concept it is. We tease out the key concepts contained in definitions of global education providing a useful starting point for our discussion of teacher education in a global world.

Methodology: Using theoretical synthesis we claim that the current era is marked by chronic crisis and disruption such that there are dislocations and fractures that render us unable to rely on convention, tradition, continuity or predictability as the basis for our decisions and actions.

Results: We term this phenomena "Dislocated Complexity" which describes a world that is beyond complexity or even supercomplexity. Rather it is world requiring action on-the-run and what we call "unscripted agency". We argue that impenetrable problems, require unscripted agency to approach unknowable unknowns resulting in a need to innovate, experiment, create, unlearn, and improvise. These attributes we claim are far more in keeping with the requirements of the current era than comparing and contrasting or trying to find synergies and congruences.

Discussion: The ontology of dislocated complexity is that we exist in a world of chronic crisis and disruption and are in is a state of becoming and what Ball (2016, p.1054) refers to as "ontological insecurity". We contend that pedagogically, dislocated complexity requires experimentation, innovation, creativity, and problematising. The disciplines and their ways of knowing form the modes of inquiry and the basis of teaching and learning approaches. Epistemologically, teacher educators and learners engage with the subject matter interactively and collaboratively through confronting problems, and through engaging in innovation and experimentation. This relies on teacher educators perceiving and exercising their agency to unsettle their own thinking and pedagogical approaches in order to rail against the outdated and inappropriate models of schooling and bring about a shift in education systems that transforms these systems into innovative engines for social change.

Keywords: dislocated complexity, unscripted agency, confrontation and confrontation.

Collaborative Applied Research: A Democratic Approach to School-based Research in ETB (State Owned) Schools

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Theoretical framework: There are different theories of democracy, and concepts such as autonomy and ownership are central to ideas expressed in the different theories, particularly in the idea of self-governance in the democratic sense of government. Projecting such conception of autonomy and ownership unto the various stages of teacher education, including teacher professional learning communities, offers an understanding of the Deweyan notion of democratic education in the context of teacher preparation, teacher learning and continued professional development.

Methods: This paper elaborates on the methodological approach of a two yearlong school-based collaborative applied research involving twelve state run schools in the mid-west of Ireland.

Findings and conclusions: Teacher learning and continued professional development improves instructional practices and student learning. Commendable efforts are being made to simplify teachers' access to academic research in education to contribute to teacher learning and thereby improve instructional practices in schools. Often, academic researchers who conduct school-based research in education and educational practices recruit teachers, school leaders and administrators as participants of their research projects. While school-based research contributes to the development of education and thereby improves instructional practices in schools, arguably, the research process tends to, almost exclusively, only contributes to the researcher's professional development, and in some cases, career advancements.

A democratic approach to school-based research, in the context of teacher learning and continued professional development, demands a research process underpinned by teacher autonomy and ownership, and which reinforces the notion of teacher as a researcher.

Keywords: Teacher, Professional, Learning.

Navigating Policy Discourses in Irish Mathematics Education: Implications for Initial Teacher Education

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This study examines the evolving landscape of primary and secondary mathematics education in Ireland and its implications for initial teacher education (ITE). Over the past two decades, mathematics curriculum reforms—including the 2012 Project Maths initiative at secondary level, and the 2023 Primary Mathematics Curriculum—have significantly reshaped mathematics teaching and learning. These reforms reflect both local priorities and the influence of global education policies, creating complex and sometimes conflicting policy messages for preservice teachers.

Drawing on Ball's (1993) policy discourse framework, Rizvi and Lingard's (2010) analysis of global policy influences, and Steiner-Khamsi's (2014) work on the reception and translation of global education policies, this research explores how international assessments like PISA (Programme for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study) shape national curricula. Using a critical discourse analysis approach, the study examines key policy documents, focusing on policy formulation, implementation, and enactment within teacher education programs.

Findings indicate that Irish mathematics education reflects a convergence of international trends, particularly the emphasis on outcome-based education and learner-centred education. Both levels emphasize cross-disciplinary skills and problem-solving, influenced by OECD's (Organisation for Economic Co-operation and Development) 21st-century skills. However, tensions emerge between secondary-level reforms which align with economic, and citizenship needs, incentivizing mathematics participation through measures like the Bonus Points Initiative. In contrast, primary-level policies prioritize play-based learning, learner agency, and integration with other subjects, fostering intrinsic motivation toward mathematics. These divergent discourses present challenges for primary ITE students, whose success perceptions may be shaped by extrinsic secondary-level experiences rather than an intrinsic appreciation of mathematics, guiding necessary pedagogical adjustments. Their challenge, and ours, is to reconceive mathematics as accessible to all. Thus, we consider that recognizing primary ITE students' mathematical histories is a crucial step in engaging with alternative perspectives and broader policy discourses.

Keywords: Mathematics curriculum reform, initial teacher education, global education policy.

The emergence of global education and competence development in curricula and the relationship of students' view in teacher education

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Background and motivation: Our basic assumption is that the development of global education and competences is transversal, i.e. it is present in a significant part of training programmes. It is also domain-specific, as it is largely the subject of the Theory of Education course. Accordingly, its emergence should be examined both horizontally and vertically. In terms of effective curriculum implementation, it is also worth exploring the relevant views of students.

Research Question and Objective: To what extent is global education and competence development reflected in the curricula of teacher education at the University of Pécs Faculty of Cultural Sciences, Education and Regional Development?

What are the main characteristics of students' views on global education and competence development?

What relationships can be shown between the design of global education and competence development and the results of the exploration of students' views in terms of effective implementation?

The aim of this presentation is to examine the emergence of global education and competence development in curricula and to explore relevant student views.

Research methodology: The emergence of global education and competence development in the curricula is examined horizontally (The Theory of Education course themes) and vertically (n25) through a qualitative content analysis structuring the content. The exploration of students' views will be investigated using deductive and inductive (mixed) qualitative research methods through semi-structured focus group interviews (n 3x5).

Key results and expected outcomes: As a result of the qualitative content analysis, which structures the content, a picture of the extent to which global education and competence development are present in the curricula, with special emphasis on transversality, is obtained. The exploration of students' views allows for developmental and methodological suggestions, as well as the formulation of strategies for the effective implementation of curricula.

Conclusion: The presentation of the theoretical and contextual background of the topic and the analysis of the results of the research allow to summarise the emergence of global education and competence development in curricula and the context of students' views on teacher education at local level and to formulate the main proposals for development and curriculum implementation and to present the most relevant scenarios.

Keywords: global education, global competencia, curriculum planning and implementation, students' beliefs.

Significant events in teacher educators' careers

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Being a teacher educator includes several elements of professional awareness concerning teacher education as a specific profession, self-studies as a method for development, second order teaching, and finally teacher educators' involvement in research (Nielsen, 2023). We aim to research how teacher educators' lived experience influences different aspects of their professional work.

Life history has been used to understand teacher educators lives and work (Lorist and Swennen, 2016; Fisher and Powell, 2023). There are several different traditions within narrative inquiry. We follow Horsdal's h (2011) approach: The focus in my approach is not the individual person – how she or he really is beyond the surface – but how the narrator tries to make sense of lived experience through her narration (Horsdal, 2011, p. 108). Narrative inquiry has also been used to understand teacher educators work e.g. White and Timmermans (2021) study on school-based teacher educators.

In order to bring forward the voice of the individual teacher educator it is necessary to lend ear to their professional stories. We have done this by setting up and recording focus group dialogues with volunteers at two international conferences. There were seven dialogues with a total of 15 participants from seven countries. Participants were prompted to self-reflect about individual meaningful moments. The following dialogue was structured so that each participant retold their meaningful moments, and the others asked clarifying questions. We find personal profiles for approaches towards TE and how TEs lived experience resonate with their professional work in relation to e.g. teaching, teacher students, bringing own ideas forward.

Significant events such as authentic meetings with students and supervision by colleagues provide basis for as well professional as personal development.

Keywords: teacher educator, life history, narrative inquiry.

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Global partnership development regarding Internship

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Our primary and secondary teacher training program has a longstanding tradition of offering student teachers practical experience in the Global South as part of their teacher education. In their evaluation report, our colleagues at Western Cape (UWC) and Tribhuvan University (TU) highlight the value of this experience, noting that it offers student teachers a valuable opportunity to apply their pedagogical knowledge and skills in a different cultural context. Moreover, it inspires them to consider working in other countries.

This practicum experience also facilitates the development of intercultural communication skills and fosters a global mindset among student teachers as integral components of their teacher education (Deardorff, 2020). Through reflection on their experiences from diverse cultural perspectives, student teachers can deepen their understanding of their learning and development, as emphasized by our partners in the global South. To enhance the student teachers' reflections on their practicum in the global south, we will develop a partnership model with our collaborative institutions in the global South to enhance mutual collaboration (Coburn et al., 2013; Lillejord & Børte, 2016; Sjölund et al., 2023).

The paper presentation will delve into developing these partnership models as a collaborative research endeavour with our partners in the global south (Farrell et al., 2022; Vanderlinde, R. & van Braak, 2010; Welsh, 2021). This research will be conducted jointly by faculty members in partnership with the findings from our HKDir 2024-27, focusing on "student teachers' internship in the Global South." The exchange of student teachers during practicums offers a valuable opportunity to gain insights into another culture and school system. To ensure a balanced collaboration, it is imperative to develop partnership models that address mutual collaboration. We will strengthen physical and virtual mobility for employees throughout the project period to improve the reflection and collaboration on Internship.

Keywords: Partnership, Internship, Teacher Education.

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Parallel sessions (line 2):

Digital innovation and Artificial Intelligence (AI): schools, teachers and students in a hybrid world, breaking time and space boundaries

Perceptions of AI-Driven Education: Insights from International Students

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As Artificial Intelligence (AI) becomes increasingly embedded in education, balancing technological integration with a human-centered approach is critical. This study synthesizes findings from an integrative literature review and qualitative interviews with international PhD students who have significant teaching experience, examining their perspectives on the role of Human-Centered AI in Education and the need for adaptable quality assurance (QA) systems in AI-enhanced learning environments. The integrative literature review spans sources in AI, machine learning, and educational studies to capture a broad spectrum of ethical concerns and human-centered approaches relevant to AI applications in education. Using semi-structured email interviews and interpretive phenomenological analysis, this study explores participants' views on essential human-centered elements for effective teaching, including empathy, interpersonal skills, and ethical considerations, alongside flexible QA mechanisms in AI-enhanced education. The synthesis of literature and participant insights reveals a tension between AI's potential to personalize learning and the perceived risks to interpersonal engagement.

The study identifies a need for QA systems that go beyond traditional metrics, proposing dynamic assessment models aligned with AI's adaptive nature. This synthesis suggests that future teacher education programs should prioritize both emotional intelligence and AI literacy to prepare educators for AI integration in ways that uphold core human-centered values. The combined insights from the literature and interviews contribute to the enhancement of teacher education frameworks that balance AI's capabilities with indispensable human qualities. This study's findings aim to inform policies and training programs that equip educators to leverage AI effectively while fostering empathy and ethical responsibility in the classroom, offering guidance to policymakers, educators, and QA professionals managing AI-driven educational contexts.

Keywords: Educational Psychology, Educational Technology, Quality Assurance in Education.

Digital Innovation in Civic Education: Exploring Practices, Participation, and the Hybrid Learning Experience

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The challenges of contemporary society necessitate the development of new skills through the adoption of innovative tools, with particular attention to digital transition processes and flexible learning environments. Over the past two decades, various digital innovation projects have been implemented in Italian schools, yielding diverse levels of effectiveness (Rivoltella et al., 2012). Providing clear guidelines to improve project implementation is crucial for the effective use of funding.

Civic education plays a vital role in fostering skills essential for lifelong learning, equipping students with the capacity to navigate a hybrid world shaped by digital innovation and Artificial Intelligence (AI). These technologies not only enhance the personalization of learning experiences but also break traditional boundaries of time and space, enabling students and teachers to interact beyond the physical classroom. The analysis of teaching practices offers valuable insights into the activation levels of students, whose active participation is fundamental for skill development (Freeman et al., 2014). Technology use in learning activities can facilitate and enrich educational materials, making them more engaging while increasing student participation (Ilham et al., 2024). Teachers play a critical role in guiding students through this hybrid landscape, fostering their active contribution to reusable learning content (Bruni, Garavaglia, Petti, 2019).

This research employs an Exploratory Sequential Design to investigate the use and non-use of digital tools during civic education classes in a vocational high school. From February to May 2024, researchers conducted 8 hours of alignment observations and 42 hours of dual observation in 7 randomly selected classes. Student interviews assessed engagement and perceptions of digital tool effectiveness, while ongoing analyses aim to develop a teacher questionnaire exploring perceptions of digital innovation and its potential to reshape education.

Keywords: Digital innovation, Civic education, Hybrid learning.

Teacher in an artificial world: training to build collaborative bits of intelligence and tackling disinformation

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Since the appearance of large language models (LLMs) in the last two years, the education communities—among others—have spent considerable time and effort analysing, studying, and making hypotheses about whether and how these models impact education.

While studies are ongoing, we focus on the right to access information and to the need of Information Literacy for teachers and therefore students.

Generative AI has become a partner of traditional search engines in seeking information (Zhou & Li, 2024), even if that was not meant to be an information retrieval. The consequence is the risk of AI-generated misinformation and disinformation has increased and it is number one among the perceived risks ranked by severity on the Global Risk Report (2024) of the World Economic Forum. AI apps were extensively adopted by students, far before being used by teachers in their activities. Looking at best practices, Finland shows that disinformation and misinformation can be addressed by investing in better educational programmes and teachers training (Bjola & Papadakis, 2020). From these premises, we discuss the need of training the teachers to tackle the risk of disinformation, following the AI teacher framework proposed by UNESCO (2024).

Keywords: AIED, Disinformation, Information literacy.

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Supporting digital innovation across boundaries: The design of a digital space to support European wide digital transformation in schools

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The pace of technology innovation continues to increase, the abrupt advancement of Artificial intelligence, a technology that has been available for over 70 years, has forced the education sector to critically question the role of technology in education and how to manage such developments going forward, AI is the only first of many disruptive technologies.

Despite many European and national policies on the importance of digital technologies to our future society, digital innovation has been relatively slow, particularly within the schools. Change has been limited to individual practices and is rarely systematic. Across the sector effective digital leadership is seen as crucial (EU DEAP, 2020). This has been due to the lack of resourcing in two key areas infrastructure and professional learning. In 2020 89% of teachers reporting low or moderate digital skills. with only 39.5% of teachers feeling prepared for digital learning. (Hamalainen et al, 2021; European Commission 2020).

This presentation will describe research conductors with 164 educators and educational leaders across four European countries, on their past and desired professional learning experiences . It was found that professional learning in the area of digital education is informal, sporadic and self-directed. From the literature it is evident these models rarely support participants to progress to leadership proficiency levels in terms of competence. Current models facilitate a basic understanding and application of technology into practice but do not support the development of digital leadership and innovation that is critical to the sector as a whole. Within the presentation we will describe how this research informed the construction of a digital space to facilitate dialog and investigate opportunities for digital innovation between digital leaders in schools across Europe while simultaneously developing digital leadership competencies.

Keywords: Digital education leadership, Digital education innovation, Digital education competence.

EcoAI: An Integrated Framework for Environmental Education and Technological Symbiosis

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The intersection of ecoliteracy and artificial intelligence (AI) presents a trans-formative opportunity to address global environmental challenges through an "EcoAI Framework" that connects data, AI, and nature. Unlike conventional educational approaches, an AI-specialized system can dynamically integrate multi-dimensional data sources, create individualized learning trajectories, and generate real-time environmental insights that resonate with users and local ecological contexts. The framework would synthesize disparate data sources, extending the data fusion approach to include traditional environmental education methods, criticized for their inability to change students' attitudes and behaviours regarding sustainability (Chen et al., 2020). The correlation of artificial intelligence, big data, virtual reality and other digital technologies has the potential to significantly raise the levels of traditional education systems (Gowda and Suma, 2017), leading to significant changes. By leveraging artificial intelligence and machine learning algorithms, scientists can now extract meaningful patterns from data, identify unexpected variable interactions and nonlinearities (Recknagel, 2001; Ryo & Rillig, 2017) and make predictions with unprecedented precision, such as for habitat suitability or species distribution. In education, these transformative capabilities support the need for a deeper understanding of ecological systems. The proposed EcoAI framework comprises five interconnected dimensions: 1. Contextual Data Integration: The framework's foundation lies in its ability to aggregate and synthesize multidimensional environmental data from diverse sources. This approach transforms abstract environmental concepts into tangible, context-specific learning experiences that resonate with individual learners' local ecological environments. 2. Personalized Learning: Central to the EcoAI framework is an adaptive learning algorithm that customizes educational content based on individual learner profiles. Utilizing machine learning techniques, the system analyses users' existing environmental knowledge, learning styles, cultural backgrounds, and cognitive patterns to generate personalized ecological education pathways. 3. Interactive Scenario: The framework incorporates predictive modelling capabilities that enable learners to explore complex environmental scenarios through advanced visualization technologies and interactive simulations, such as: Explore potential ecological outcomes of individual and collective actions; Understand systemic interconnections within ecological systems; Develop critical thinking skills about environmental challenges; Visualize long-term implications of sustainability choices 4. Behavioural Transformation Mechanisms: Beyond knowledge transmission, the EcoAI framework integrates evidence-based behavioural change strategies. By providing real-time feedback, comparative analytics, and personalized sustainability recommendations, the system motivates learners to translate ecological understanding into concrete environmental actions. 5. Ethical and Inclusive Design: A critical component of the framework is its commitment to ethical AI development, like mitigate algorithmic bias, ensure data privacy and security, provide accessible interfaces for diverse user groups and respect cultural variations in environmental understanding.

Keywords: Ecoliteracy, Education, Artificial intelligence.

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Leveraging Diverse Feedback for Enhanced Essay Writing: The Role of Teachers, AI, and Peer Support in Student Learning

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This study investigates the impact of diverse feedback sources on student learning in essay writing, focusing on feedback from teachers, artificial intelligence (AI), and peer collaboration. Within the framework of Assessment for Learning (AfL) approach (Black et al., 2003; Hopfenbeck et al., 2013), the study examines how various types of feedback support the development of students' conceptual understanding of essay content and structure. Eighty-one ninth-grade students from three Norwegian public secondary schools participated in this mixed-method study. Students were divided into target and comparison groups, with the target group receiving AI-generated feedback through Essay Assessment Technology (EAT), while the comparison group relied on peer feedback.

The analysis, guided by a cultural-historical perspective (Galperin et al., 2023), highlights how the integration of EAT feedback enhances student engagement and understanding of content by providing structured and categorised suggestions. Findings suggest that AI feedback, when used alongside teacher and peer input, facilitates a deeper engagement with content, structure, and revision processes, resulting in significant improvement in students' writing. However, peer feedback in the absence of AI tended to focus more on surface-level issues, like spelling, rather than on content development. Statistical analysis revealed a notable improvement in the quality of essays in the target group compared to the comparison group.

These results underscore the value of AI-driven formative feedback in educational settings, suggesting that AI has the potential to complement traditional assessment practices by enriching student learning and engagement.

Keywords: Essay Writing, AI Feedback, Assessment for Learning (AfL).

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Prototype of a Participatory Digital Platform with Artificial Intelligence Integration for the Management and Learning of the Cultural Heritage

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In this paper, we present the conceptual design of a prototype for a participatory digital platform that aims to integrate tourist routes with cultural heritage learning and collective knowledge construction. The proposal seeks to offer students and teachers, as well as all travellers, a tool that not only indicates the most efficient itineraries between two geographical points but also enables learning through discovery and collaboration via active community participation. The value of this proposal lies in its citizen science approach: users can register new monuments or points of interest and add relevant information about existing ones. These contributions could undergo a community validation process similar to Wikipedia, where other users or even an external review committee could be included to approve the submissions. The proposal includes the design of a platform that, on one hand, manages user interaction through a tool for following tourist routes and, on the other hand, facilitates community participation. Additionally, the project proposes integrating content generation tools, such as those based on generative AI models, which will provide novel ways of interaction to increase the application accessibility and the engagement of the users. This proposal would enable collective knowledge construction, encouraging both locals and visitors to care for and promote their cultural environment while learning about cultural heritage using the latest available technologies. This project has been designed from an interdisciplinary approach at the intersection of technology, education, and culture.

Keywords: Citizen science, Cultural heritage, Participatory learning.

An exploratory study on AI literacy in the United Arab Emirates: teachers' attitudes, perceptions, and acceptance

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Artificial intelligence (AI) literacy education in early childhood settings is a rapidly growing area of interest among educators, parents, and researchers globally. Efforts to develop age-appropriate AI educational tools aim to teach AI literacy to younger learners, but the role of preservice teachers' perceptions and attitudes toward these tools remains underexplored. This study examines the views of preservice teachers on using AI educational tools and identifies the factors influencing their attitudes toward AI literacy education in UAE. Guided by the technological acceptance model and the TPACK framework, the research employs a mixed-method approach, combining quantitative and qualitative approaches. A total of 165 preservice teachers in the United Arab Emirates University participated. Data were collected on two related phases. Phase one involved semi-structured surveys which were completed by all participants. Informed by findings from phase one, participants indicating extreme responses, took part in the focus group discussion. The findings reveal that preservice teachers generally have positive perceptions of the usefulness and ease of use of AI educational tools in their teaching. Regarding professional development in AI, 81% of participants had received such training, while 19% had not. Many teachers favor an arts-based approach to AI literacy education. However, challenges such as insufficient content knowledge and limited experience with AI, along with a lack of TPACK knowledge, were identified. The study highlights five key factors influencing teachers' acceptance of AI tools: (a) perceptions of their AI CK and experience; (b) technical challenges; (c) tool attributes; (d) school infrastructure and budget constraints; and (e) concerns over distractions and emotional responses from students. These insights underscore the need for professional development, better infrastructure, and support systems to improve teachers' ability to effectively integrate AI tools into the classroom.

Keywords: Artificial intelligence, AI literacy, AI educational tools.

Beyond Boundaries: Digital Innovation and AI in Shaping the Hybrid Future of Education

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As education enters a new era, *Beyond Boundaries: Digital Innovation and AI in Shaping the Hybrid Future of Education* examines how digital transformation and artificial intelligence are reshaping learning, transcending the physical and temporal limits of traditional classrooms. This dynamic oral communication session will engage participants in exploring how AI-powered tools and digital platforms create hybrid learning spaces that cater to individual needs, foster flexibility, and amplify student engagement.

Bringing together educators, innovators, and AI experts, this session will delve into how technology enhances teaching methods, supports personalized learning paths, and addresses educational disparities. Attendees will gain insights into real-world applications of AI in curriculum design, assessment, and real-time feedback systems that empower teachers and students alike. By redefining what's possible within and beyond the classroom, this session inspires fresh perspectives on the future of education in a world without boundaries.

Keywords: Hybrid Learning, AI-Driven Education, Digital Transformation.

A teacher training proposal for the responsible and effective integration of artificial intelligence in education

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The rapid adoption of Artificial Intelligence (AI) has led to significant changes in various aspects of daily life. Its presence in education is transforming teaching and learning processes, offering opportunities to increase efficiency, automate repetitive tasks and personalise learning experiences. However, this increasing presence of AI tools raises concerns about ethical implications, potential misuse and information bias. Many educators lack the necessary knowledge and skills to feel confident in ensuring a responsible and informed implementation of AI in their teaching practice. Without adequate training, the integration of AI into the educational process will remain inconsistent.

The aim of this research is to design, develop and evaluate a training strategy to implement AI for secondary school teachers. That will support educators in understanding, applying and evaluating AI in their professional practice. The proposed training framework is designed to provide teachers with theoretical knowledge, practical strategies and ethical considerations that will equip them with the confidence to use AI-based tools in their professional development. This presentation will focus on a systematic literature review, analysing existing research on AI in education, teachers' current knowledge and use of AI tools and challenges related to their implementation in the classroom.

The preliminary results obtained from a first review will provide an initial framework for the training proposal, which will become the basis for the development of a comprehensive training program. The program will equip educators with the necessary competencies to integrate AI into their teaching practice. By addressing both the opportunities and challenges presented by AI in education, this project will establish a more informed, ethical and effective approach to AI use in secondary schools.

Keywords: Artificial Intelligence, Secondary School Teachers, Professional Development.

Perspective on Artificial Intelligence Tools in Mathematics Education Assessment and Improvement

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Mathematics education plays a fundamental role in our current society, being essential for developing logical thinking and problem-solving skills in an increasingly technological world. The incorporation of Artificial Intelligence (AI) in the education of mathematics represents a potential revolution in learning assessment methodologies while offering tools that promise greater personalization of learning. This study presents a systematic analysis of the impact of AI in mathematics education, focusing on the paradigm shift generated by the introduction of advanced machine learning models and large language models such as ChatGPT. The research examines how these solutions enable teachers to obtain detailed information about student performance, facilitating personalized learning and early identification of areas for improvement.

The analysis focuses on identifying the main challenges faced in implementing AI-based tools, such as algorithmic bias, transparency in decision-making, and data privacy. Furthermore, it also examines the digital divide and equity in access to these technologies, considering that not all educational institutions have the necessary resources for their effective implementation. The results of this research are aimed at understanding how AI can transform assessment in mathematics education from various perspectives, which will facilitate the development of new, more effective, and equitable teaching methodologies.

Keywords: artificial intelligence, mathematics, evaluation.

Predictive Diagnostic Assessment: A Strategy for Student Retention in Basic Education in Brazil

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This paper describes an ongoing academic project within the Education Department at the Catholic University of Brasília (UCB). It involves the implementation of a predictive diagnostic system to combat school dropout in Basic Education. Developed with the support of the Foundation for Research Support of the Federal District, the project aims to create a prototype based on artificial intelligence (AI) to monitor and intervene in students' trajectories, ensuring their retention in school. The research involves analyzing variables and conditions that influence school dropout, with the goal of providing a theoretical and methodological basis for creating an effective predictive system. The prototype's development takes place within the public education network of the Federal District, following predetermined steps such as the collection and analysis of quantitative and qualitative data, interviews with strategic subjects, data processing, tool development and training, and testing and diagnostics. The main results include the development of an AI prototype to systematically track students' trajectories and plan institutional intervention actions. The predictive system is designed to identify risk factors and provide consolidated information to school managers, enabling autonomous and informed management in seeking solutions to school dropout. Socioeconomic data, school attendance, and academic performance are considered topics to create a comprehensive panorama of the educational situation. The use of AI and machine learning techniques is fundamental for predictive analysis and the generation of detailed reports, which assist in strategic decision-making. In short, the study aims to contribute to an educational policy aligned with national guidelines to address school dropout. The implementation of a predictive system is a crucial strategy to ensure student retention and promote inclusive and quality education.

Keywords: Predictive System, Student Dropout, Artificial Intelligence (AI).

Applying human agency and organizational flexibility in the era of IA

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In 2025, UNESCO dedicated the International Day of Education to Artificial Intelligence (AI) technologies under the theme "Preserving human agency in a world of automation." Aligned with this humanistic vision, the Catalan Society of Pedagogy (SCP) is applying AI's transformative potential to enhance organizational flexibility and digital readiness in education.

The SCP pursues research to transform education through evidence-based, human-centered approaches. Recognizing the revolutionary impact of AI on traditional practices, SCP is adopting a hybrid, flexible organizational model, with ground-breaking initiatives such as online and multinational board meetings, biannual hybrid conferences held simultaneously in two countries, public and private talks on AI, and specialized AI courses for educators and schools.

Central to this initiative is the "Aplica" project, which fosters collaborative action-research training and empowers educators to develop, evaluate, and share AI-based practices, while co-creating innovative strategies to strengthen student agency in hybrid educational environments. The "Aplica" Project advocates for the creation of school-university networks to integrate ethical AI research into teaching, learning, and self-assessment processes. It prioritizes organizational flexibility and global citizenship, under the umbrella of the Universal Design for Learning (UDL) principles.

This presentation will showcase key findings from real-world experiences within the SCP AI training courses, which are used to design adaptive learning pathways, foster collaboration, and enhance teacher professional development. Case studies will highlight the measurable benefits of AI in addressing diverse learning needs and improving school performance, with examples of innovative AI-tasks that are now being implemented in Catalan schools.

By offering actionable insights, this session aims to inspire educational leaders, teacher trainers and universities to embrace AI as a tool for fostering global citizenship, digital competence, and inclusive education. It envisions a future where AI can be used as a catalyst for human collective action to develop sustainable, innovative, and equitable educational practices.

Keywords: Artificial Intelligence (AI), Hybrid Learning, Collaborative School Networks.

Repurposing multimodal AI tools for EFL essay writing

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A thesis statement is a key element of an essay introduction, yet many English as a Foreign Language (EFL) students struggle to develop one. This study explores the suitability of NotebookLM, a general-purpose multimodal AI tool, as a complementary aid in academic essay writing. While NotebookLM was not explicitly designed for writing instruction, this research examines its contribution to supporting students' understanding of thesis statement construction.

The intervention was implemented in a systematic session where 19 EFL pre-service teachers engaged with the tool through four sequential phases: initial setup, resource compilation, source interaction, and feature exploration.

Three main themes emerged through inductive thematic analysis of participants' responses: 1) tool characteristics and pedagogical utility, 2) accessibility and technical challenges, and 3) positioning against technological alternatives and traditional methods. The analysis focused on how users utilised NotebookLM's features (FAQ, Study Guide, and Podcast) to organise and analyse thesis statement resources.

Findings indicate that students successfully adapted NotebookLM's general capabilities to thesis statement development, particularly appreciating the FAQ system for clarifying key concepts and the Study Guide for structuring research materials. However, technical limitations were identified, especially in advanced features like podcast generation, which some students found complicated or ineffective. While NotebookLM provided helpful guidance, its effectiveness varied depending on students' ability to engage with AI-generated content critically.

This research contributes to understanding how multimodal AI tools can be meaningfully repurposed for specific academic writing tasks when integrated into structured interventions and didactic sequences. It underscores the importance of pedagogical scaffolding to maximise AI's benefits while mitigating its limitations.

Keywords: NotebookLM, Multimodal AI in Education, AI-assisted writing.

Exploring the Relationships Between Digital Competence, Metacognitive Awareness, and Teachers' Virtual Learning Environment Success

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In a rapidly evolving educational setting, digital competence and metacognitive awareness have emerged as critical predictors of success in Virtual Learning Environments (VLE). Due to the rapid advancements shaping today's technology-based society and to the predictive role of metacognitive awareness in teachers' readiness for online instruction, research should focus on finding empirical evidence regarding pedagogical models addressing teachers' metacognitive skills alongside digital competence. The study aims to investigate the relationship between pre-university teachers' metacognitive awareness, digital competence, and their perspective on the virtual learning environment's success, testing the mediating and moderating role of metacognitive awareness in this dynamic. The study employs a quantitative research approach, a group of 123 teachers at pre-university levels in Romania answering a survey comprising validated measurement instruments such as the DigCompEdu framework (for digital competence), the Metacognitive Awareness Inventory (MAI), and the VLE Success Scale. The findings of the present study highlight that teachers' metacognitive awareness and digital competence play different roles in predicting VLE success. The results suggest the fact that digital competence significantly predicted VLE success. The statistical analysis also revealed that teachers with higher levels of metacognitive awareness are more likely to achieve better outcomes in VLE. While metacognition has a strong independent impact, its mediating and moderating roles are not supported in this study. The insights provided by these research findings are valuable as they may guide both theoretical developments and practical recommendations for policymakers, educators, and instructional designers to develop more effective teacher training programs targeting digital education. The paper also discusses the future research necessity of exploring longitudinal designs for digital competence and metacognitive awareness in order to assess their long-term impact on VLE success and pedagogical innovation.

Keywords: Digital Competence, Metacognitive Awareness, Virtual Learning Environment.

The relationship between AI-TPACK (Artifical Intelligence-Technological Pegagogical Content Knowledge) levels and self efficacy perceptions of 4th grade English pre-service teachers in Türkiye

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The rapid development of technological tools in education has led to the emergence of frameworks such as the Technological Pedagogical Content Knowledge (TPACK) model, which examines teacher competencies linked to critical qualities regarding the use of technology. In today's educational landscape, proficiency in technological tools positively influences teacher self-efficacy. As such, AI-TPACK (Artificial Intelligence Technological Pedagogical Content Knowledge) has become a crucial competency for pre-service English teachers upon the leading dominance of AI. This study investigates the extent to which AI-TPACK levels among fourth-year pre-service English as a Foreign Language (EFL) teachers predict their self-efficacy perceptions. The influence of demographic variables (gender, GPA, and teaching experience) on these constructs is also researched. The study adopts a mixed-methods design. The sample consisted of fourth-year pre-service English teachers who had completed relevant teaching practice and technology-related courses. For the quantitative part, convenience sampling was employed to recruit participants with the desired characteristics, and 303 pre-service teachers volunteered to participate in the study. Two scales, i.e., Teachers' Self-Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2007) and AI-TPACK Scale (Ning et al., 2024) were used as data collection tools. Data were analyzed using SPSS 20, with descriptive statistics, Independent T-tests, One-Way ANOVA, and multiple regression analysis applied to examine differences in AI-TPACK and self-efficacy based on demographic variables and to determine the predictive power of AI-TPACK on self-efficacy. For the qualitative part, focus group discussions were held, and 30 pre-service teachers provided data. The qualitative data were analyzed using Creswell (2007)'s data analysis spiral. The findings revealed a low positive correlation between AI-TPACK and teacher self-efficacy. No significant differences were found in AI-TPACK or self-efficacy based on gender, GPA, or teaching experience. However, a significant difference was observed in gender regarding two subdimensions of AI-TPACK: content knowledge and AI-technological pedagogical knowledge. When interpreted together with the qualitative data, the study concludes that pre-service EFL teachers' self-efficacy levels are influenced by their AI-TPACK competencies, highlighting the importance of integrating AI-related knowledge into teacher education programs.

Keywords: Pre-service EFL teachers, teacher self-efficacy, AI-TPACK.

Parallel sessions (line 3):

Sustainability in teaching and learning processes and school improvement

Self- and peer-assessment in Higher Education through the Moodle platform

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Educational research has shown how formative assessment is crucial in supporting student learning processes (Boud, 2007; Black & William, 2009; Hattie & Clarke, 2019). The European Commission recognises how formative assessment must be implemented for students from all levels of study to be protagonists in their learning processes, so as to develop autonomy and self-regulation for learning to learn (Cefai et al., 2021). Higher education contexts are at risk of taking a back seat to summative assessment. The aspects that make its implementation difficult are the large number of students in the lecture rooms, the management complexity, and the limited time available. Digital technologies can help by offering networked spaces where resources can be shared, interacted with, given and received feedback (Boud & Molloy, 2013).

This research aims to understand whether the university platform Moodle can be an effective tool for conducting formative assessment practices. The study also explores how self- and peer-assessment activities organised through the platform can foster university students self-efficacy, self-reflection, involvement and professional skills.

This study involved 150 students from the University of Genoa from four different degree courses: architecture and design, physics, engineering, and literature, during the 2024/2025 academic year. The self- and peer-assessment activities, supported by the university's Moodle platform, were organised in agreement with four professors who teach on these degree courses.

At the end of the activity, the students completed a semi-structured questionnaire. It included closed answers with a Likert scale on the level of agreement with the sentences regarding self-efficacy, self-reflection, and engagement and three open questions on the acquisition of professional skills.

The data analysis revealed a good level of effectiveness of the activities and recognised which aspects are acquired by the students through these formative assessment practices.

Keywords: Formative Assessment, Higher Education, Moodle platform.

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Parent-Teacher Cooperation as a Hidden Factor Influencing Students' Academic Achievement

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Teachers have a significant impact on student achievement; however, there is still insufficient empirical evidence on how to improve the academic success of children from low-status families. The influence of a family's socioeconomic status (SES) on parenting activities has been extensively researched, and findings consistently indicate that higher SES is associated with more active and effective parental involvement. Epstein (2001) argues that teacher practices supporting partnership between family and school can mitigate the negative effects of low SES on parental involvement (PI). However, it remains unclear which specific school policies and teacher practices are most effective in engaging low-status parents.

This research aims to explore the types and effects of teacher practices and FSCP policies in three Central and Eastern European (CEE) countries.

Hypotheses:
1. Parental SES influences parents' perceptions of teacher practices.
2. Parents' perceptions of teacher partnership practices have a stronger impact on parental involvement than individual student- or parent-related characteristics.
3. Teachers' partnership practices with parents positively affect students' academic achievement.

The questionnaire was adapted from items used in previous research (Fantuzzo et al., 2000; Ringenberg et al., 2005, PISA 2018), with modifications to account for the cultural context of the CEE region. The study involved parents of primary and middle school students in three CEE countries (N = 1,002).

Results:
- Low-SES parents perceive teachers' community development practices and special support as more significant.
- Parents' perceptions of teachers' partnership practices have a greater impact on parental involvement than individual factors (e.g., student- or parent-related characteristics).
- Individual parental involvement mediates the relationship between teachers' partnership practices and student performance.

One of the most important conclusions is that teacher students need to be prepared to develop mutual support with parents.

Keywords: Parent-teacher cooperation, student achievement, partnership practices.

Enhancing Process-Oriented Knowledge Development Through Partnerships in Teacher Education

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The grant scheme for local competence development in Norwegian kindergartens and schools exemplifies a partnership designed to foster collective professional development. These partnerships facilitate development processes shaped through collaboration among participants within newly established structures (Hermansen & Mausethagen, 2023). Such collaborations necessitate boundary-crossing and negotiations, potentially transforming the relevance and prominence of knowledge in educational contexts (Daza et al., 2021). Consequently, there is a need to investigate the dynamics and impact of these collaborative development processes.

Research Objective: This study addresses the following research question:

What opportunities and challenges are inherent in process-oriented development work within partnerships, and how can these processes be effectively understood?

Context and Methodology: The study examines a three-year project involving staff from a teacher education institution, several municipalities, and student teachers, with the goal of establishing equitable collaborative structures. Employing a qualitative design, data were collected from project gatherings, encompassing written reflection notes on partnership principles, audio recordings of group discussions, and a final phase panel discussion. The audio recordings were transcribed and analysed to identify meaningful content related to process-oriented knowledge development principles.

Theoretical Framework: Partnerships in teacher education can be conceptualised as a 'third space' where collaboration aims to enhance capacities at all educational levels (Smith, 2016). 'Third space' refers to a state achieved when entities with different perspectives or interests collaborate (Daza et al., 2021; Zeichner, 2010; Bhabha, 1994). Essential prerequisites for this collaborative state include equality, role clarity, democratic processes, negotiations, and relationship building (Daza et al., 2021). This study's findings are discussed within the framework of the third space theory and its underlying prerequisites.

Preliminary Findings: Process-oriented development offers various opportunities. Informants reported that a processual approach ensures ownership, grounding, and personal engagement. Effective development processes lay the groundwork for establishing sustainable structures within professional communities that can adapt across contexts. Over time, these processes contribute to continuity and relationship development. Essential factors for successful processes include clear leadership, effective communication, and responsiveness to participant needs.

However, challenges also emerged. Differences in work contexts between higher education (HE) staff

and kindergarten/school staff often lead to frustration. Kindergarten/school staff frequently feel constrained by limited time for reflective processes, focusing instead on immediate solutions for daily challenges. Conversely, HE staff often feel burdened by the responsibility of driving the processes and may struggle with process management.

Keywords: Partnerships in teacher education, Process- oriented development in through partnerships, The third space - for educational development

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Fostering Literacy through reading-writing integration: Insights from a program in primary and middle school

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This study provides an in-depth evaluation of the INFERODANTIS-AILS project, a pedagogical initiative designed to integrate reading and writing activities (Kim et al., 2024) as interdependent processes to enhance literacy competence among students in primary and secondary schools. Implemented in three Italian provinces, the project involved 320 students and 22 teachers across 19 classes. The eight-week intervention focused on formative assessment, active learning, and collaborative teaching practices, offering educators tools to create meaningful, student-centered learning experiences (Gentile, 2019; Gentile & Chiappelli, 2016; Rosenshine, 2012). Teachers played a pivotal role by documenting their experiences in detailed weekly logbooks, which served as a rich source of qualitative and quantitative data, capturing classroom dynamics, student engagement, and the efficacy of instructional strategies. Key findings highlighted statistically significant improvements in students' writing quality, with remarkable advancements in enhanced global ($F = 42.67$, $p < .001$) and vocabulary quality ($F = 22.49$, $p < .001$), and their ability to reach well-structured, coherent conclusions ($F = 4.51$, $p > .05$). Furthermore, self-efficacy in reading ($F = 4,18$, $p < .05$) and writing ($F = 4,91$, $p < .05$), significantly increased across the student cohort, fostering a stronger sense of competence and confidence in their literacy skills. However, no statistically significant changes were observed in text comprehension, suggesting that more prolonged and targeted interventions may be necessary to effectively address its complexities, particularly for students with lower initial proficiency (Kintsch, 2013). The teachers' logbooks also revealed critical insights into pedagogical practices, documenting both challenges and successes in fostering student autonomy, promoting effective group collaboration, and ensuring instructional clarity. These findings highlight how integrating reading and writing can improve literacy while creating a more inclusive and flexible learning environment. This approach helps meet diverse students' needs and encourages educators to reflect and enhance their teaching strategies.

Keywords: Integrated reading-writing, literacy competence, teacher reflections.

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Entrepreneurship Competence Development in Primary School Pupils through Student Projects: A Case Study

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In this paper, we will present findings from a case study that investigates how student-led projects contribute to developing entrepreneurship competence in primary school pupils. Defined by the European Commission as one of the key competencies for lifelong learning, entrepreneurship competence is also integrated into the Czech national curriculum (RVP ZV). Despite its significance, its systematic development in primary education remains in its early stages.

The study follows a qualitative research design, utilizing the EntreComp framework as a basis for defining entrepreneurship competence. Data were collected through questionnaires, semi-structured interviews, and field notes. The research sample included three pupils, a school psychologist as a project facilitator, and school management representatives. The study aimed to capture various perspectives on student projects, examining their impact on these pupils' skills: initiative, creativity, problem-solving, and collaboration.

Findings suggest that student projects provide an effective environment for developing entrepreneurship competence, particularly when facilitated by an engaged mentor. The active involvement of pupils in all phases – from ideation to implementation – enhanced their ability to identify opportunities, work with resources, and take responsibility for their projects. The support of the school facilitator played a crucial role in guiding pupils while allowing them to take responsibility for the process. School management's involvement also contributed by creating a supportive environment for project-based learning.

While the study results highlight the positive effects of student projects, it also points to the need for a more objective measurement of entrepreneurship competence development over time. Future research should focus on refining assessment tools to track progress more accurately and explore the long-term impact of student projects on pupils' entrepreneurial mindset.

Keywords: Entrepreneurship competence, student projects, primary education.

Influences of Preservice Teachers' Knowledge of Student Mathematical Thinking on Their Mathematics Representations for Whole Number Instruction

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Understanding students' mathematical thinking could influence teachers' effective using representation (Bossé, Adu-Gyamfi & Cheetham, 2011). Whole number topics can be useful in examining the above assumption (Thanheiser, 2009). This study examines these assumptions, focusing on preservice teachers.

The conception of teachers' knowledge of student mathematics thinking (Ball, Thames & Phelps, 2008) guides pre- and post-assessment design. The mathematics representation conception (Lesh, Post & Behr, 1987) guides the coding design to capture different representations. The number property conception (Van de Walle, Karp & Bay-Williams, 2022) guides the coding design to identify clear and accurate representation explanations.

The study included 58 elementary preservice teachers and collected pre- and postassessments on their knowledge of student mathematics thinking and lessons on whole numbers. Paired t-tests detect differences between the two assessments. The lessons were coded for different representations and clear and accurate representation explanations. Independent t-tests detected differences among different representations and clear and accurate representation explanations. Pearson's correlations identify the relationships between participants' knowledge of students' mathematics thinking, their using different representations, and their clear and accurate representation explanations.

The study showed that participants substantially developed their knowledge of student mathematics thinking. They most frequently used pictorial, symbolic, and concrete representations in sequence. They also frequently explained set, linear, and area properties clearly and precisely in sequence. However, it showed no significant relationship between participants' knowledge of student mathematics thinking, using different representations, and developing clear and precise explanations.

The study confirms that preservice teachers could develop their understanding of student mathematics thinking in the methods courses. It contributes to preservice teachers' preferred use of representation kinds and clear and precise representations in teaching. It challenges the assumed relationship between their understanding of student mathematics thinking and their effective use of various representations (Bossé et al., 2011).

Keywords: Preservice teacher, Mathematics knowledge, representation uses.

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Autonomous learning and teachers' role

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The acquisition of autonomy in the learning process is central to the educational project at the Institut Angeleta Ferrer. The *Itinerari Personal de Aprenentatge* (IPA) is designed to foster student autonomy and responsibility through self-directed learning, where students take an active role, transforming the teacher's role in the process.

From a neuroeducational perspective, we analyze the role of teachers in promoting autonomy, focusing on intrinsic motivation, metacognition, and self-management as key elements. Drawing on Montessori's insights, teachers can take on different roles—observer, guide, or participant—based on students' needs.

As a conclusion, we can state that is essential to consider the varying developmental stages of students, particularly those with special educational needs, which raises questions about whether all students can manage autonomy in the same way. Teachers' interventions, shaped by their personality, make the teacher's role more diverse and adaptable, adjusting to each student's specific needs to maximize their autonomy.

Keywords: Autonomy, teacher's role, metacognition, intrinsic motivation, self-management, guidance.

Teachers' perception of school climate assemblies: strengths, areas for improvement and sustainability competencies among students

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This research analyses the perception of primary and secondary education teachers regarding the strengths, aspects for improvement and the learning promoted in students, after participating in the school climate assemblies organised in the school year 2023-24. These assemblies are part of the EDUCLIMAD and EDU4CLIM R&D&I projects, which are focused on the implementation of school climate assemblies and the development of sustainability competencies in the participating students. To this end, an ad-hoc questionnaire was designed and administered to 27 teachers. A descriptive and qualitative content analysis was carried out by coding the responses. The results show that in general teachers have a positive opinion of the process and methodology used in school climate assemblies. The aspects most valued as strengths are related to the development of the sustainability competence collective action and the active participation of students throughout the process. The increase in students' motivation and interaction through the organisation of a final Sustainability Ideas Fair is also highlighted as a strength, where students share and disseminate their action proposals to promote sustainability at a local level with the educational community, political representatives and the general public. Regarding aspects for improvement, teachers propose adjustments in the planning and timing of the school climate assembly sessions. According to teachers' perception, assemblies contribute to improving students' environmental awareness and acquiring new sustainability competencies such as collective action and the contextualisation of problems. This study shows that school climate assemblies can be an effective educational strategy that teachers can use to increase students' awareness and to promote their active involvement in issues related to climate change and sustainability at a local level, as well as to promote sustainability learning and competencies.

Keywords: school climate assemblies, teachers, perception.

Sustaining Educational Leadership in Crisis: Principal Practices in Ukraine's Schools

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Sustainability in education requires a comprehensive approach to school reform that fosters self-improvement, adaptability, and resilience to shocks such as war or economic collapse. This study focuses on how leadership practices contribute to sustainability in schools amidst socio-political and economic instability, specifically in the context of Ukraine. Drawing on Leithwood et al. (2006) and Wahlstrom et al. (2010), the study explores how school leadership can drive long-term improvements by embedding reforms directly into the school, transforming both teaching and learning practices and school culture. The research emphasizes the importance of principals in revealing the potential within their schools and utilizing leadership practices that promote collective efficacy, develop faculty skills, and foster collaboration. The study further highlights the role of capacity building in supporting sustainable change, which allows schools to continuously improve student learning and adapt to new demands. The findings suggest that successful leadership requires a focus on vision-setting, fostering professional development, redesigning organizational structures, and managing instructional programs effectively. The study calls for reforms that go beyond short-term performance measures, urging a more long-term approach to education system improvement that can withstand external challenges.

The qualitative study uses semi-structured interviews with 7 school principals from various regions in Ukraine. The research explores their leadership strategies, challenges, and approaches to fostering sustainability within their schools during times of crisis and finding answers to the research questions: 1)How do principals perceive their role in fostering sustainability and long-term improvement in schools amidst socio-political and economic instability in Ukraine?; 2) What leadership practices contribute to the sustainability of schools during periods of crisis, particularly in conflict-affected areas?

The findings reveal that effective school leadership in Ukraine is focused on building the capacity of both individual educators and the entire school community. Key leadership practices include setting a clear vision, developing professional capacity, fostering collaboration, and managing instructional programs. Principals also emphasized the importance of community engagement and resilience in ensuring the sustainability of educational reforms. Despite the challenges posed by instability, principals who adopted these practices were able to maintain focus on long-term goals, ensuring that their schools continued to improve and adapt in the face of adversity. The findings underscore that leadership practices that promote capacity building and collective efficacy are essential to creating a sustainable education system capable of weathering external shocks.

Keywords: school leadership, sustainability in education, capacity building.

Exploring the role of hierarchical geospatial enquiry as a pedagogy in innovative teacher education on climate change and sustainability

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Climate change and sustainability education in schools is vital in the current global climate emergency (Reid, Dillon, Ardoin and Ferreira, 2021). Geography teacher education though central to this aim lacks sufficient provision in this specific regard (Hammond, Fargher and Walshe, 2024). This is particularly the case with geospatial tools that can support deeper geographical knowledge and understanding about (Fargher and Healy, 2021). We address this gap by reporting reports on a recent international project on supporting geography teacher education on climate change and sustainability. Through two workshops and focus groups, a total of 75 master's students at University College London and the University of Zaragoza were introduced to how the concept of hierarchical geospatial enquiry and sustainability education (Hwang, 2013) can be used to create curriculum resources for climate change and sustainability education. Through thematic analysis of the student teacher curriculum resources and focus group transcripts, we reached four main findings from the research: 1. Using a hierarchical geospatial model to frame teacher education pedagogy benefits teachers in significant ways in combining distributional, relational, comparative and temporal data about the complexities of climate change. 2. A hierarchical approach aids teacher educators in building training for beginner, intermediate and advanced teachers but reveals distinct challenges for those with no prior experience. 3. Expert geography subject knowledge has a key part to play in influencing the success rate of student teachers using geospatial tools in climate change and sustainability education. 4. There is scope for future research on widening the use of hierarchical geospatial enquiry to other school subjects in conjunction with geography.

Keywords: Climate change and sustainability education (CCSE), hierarchical geospatial enquiry, teacher education.

Student participation as a key aspect of equity and wellbeing

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This study, focusing on the global theme of student participation and equity in school and learning experiences, was conducted by a group of teachers and led by an academic researcher.

The Department of Education in Ireland aims to ensure that the experience of students throughout their primary and post primary education will be one that enhances, promotes, values and nurtures their wellbeing. The Wellbeing Policy Statement and Framework for Practice (Government of Ireland, 2018) highlights the importance of student participation and the inclusion of students in the life of the school in a manner that will enhance their sense of belonging, security and connectedness to school. This research was carried out by Dublin City University in conjunction with Educate Together and teachers in four Educate Together schools. The study was partly funded by the Teaching Council under the John Coolahan Research Fund.

The purpose of the research project is to explore the perception of students in relation to their participation at both a classroom and whole schools level and their sense of belonging in the school. Literature on student participation informed the development of a survey that was circulated to students in 4 Educate Together schools (2 primary and 2 post-primary). A total of 201 students participated in the survey (125 primary and 76 post-primary) which was completed in 2022. The key research questions include: How do students perceive their participation in school at a classroom and whole school level? In which activities at the classroom and at a whole school level do students feel they participate in most and least? To what degree are students involved in decision making in the school? How do students perceive their sense of belonging to the school?

The key findings of the study highlight the classroom and whole school activities in which students participate most and least, the factors that students' claim prevents their participation, student perception of the degree to which they are involved in decision making in the school and their level of influence on decision making. The findings also highlight students' perception of belonging in the school and what helps them to feel a sense of belonging in the school.

Keywords: Student participation, decision making, classroom participation.

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Does the Quality of Young Teachers' Lessons Change through Two Years of Continuous Lesson and Contrastive Reflections on Teaching and Learning during Post-Lesson Reflective Sessions?

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Research on teacher reflection and Lesson Study is expanding beyond teacher training and teacher expertise. However, if teachers grow through reflection and Lesson Study, will the quality of their lessons and the learners' academic performance also improve?

The purpose of this study is to examine how young teachers' professional development advance and the quality of their lessons change over one or two years through continuous lessons and contrastive reflections on teaching and learning during post-lesson sessions.

This research project spans for two years, from April 2023 to March 2025. The participants are eleven young elementary school teachers with 2 to 7 years of classroom teaching experience who agreed to participate in the project. Lesson and post-lesson reflective sessions were conducted as a set of four times a year. Teachers' professional growth was collected through teacher efficacy scale surveys (Tshannen-Moran & Hoy, 2001) and teacher interviews, while the quality of lessons were analyzed based on students' learning engagement during lesson.

Below are the results at the end of the first year:

A year of continuous lessons and reflections does not immediately influence teacher efficacy or change the quality of lesson (as measured by students' engagement in learning). Rather, teacher efficacy is heavily influenced by classroom management and teacher-student relationships. Changes in the quality of lessons depend more on the teacher's individual approach to lessons and learning than on their teaching experience or the continuous reflection. These changes seem to be related to whether third- and fourth-year teachers encounter incidents that prompt them to rethink their own teaching. In that sense, the continuous lessons and reflections in this study could provide such moments of awareness to teachers in their fourth year of teaching or so.

Keywords: Lesson and Reflection, Quality of Lesson, Students' Learning Engagement during Lesson.

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Equity: Global Challenge, Local Answers. Action Research as a Device for Teacher Education and School Improvement

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This theoretical paper fits into the international reflection on the role of education for social justice (Griffiths, 2003; Hackman, 2005) and the consequent assumption of equity as an indispensable horizon of meaning (Ainscow, 2020). Reflections concentrate on the need to make schools a great equalizer (Bernardi & Ballarino, 2016); the focus is on decentralised school systems in which schools have wide range for organisational, administrative, financial and curricular autonomy (Cheng et al., 2016; Keddie, 2015).

Equity is undoubtedly a global challenge (OECD, 2012; UN, 2015); however, it requires local responses that specifically address the needs of individual student groups. Therefore, a pedagogical reading of territories (Barthes et al., 2018; Champollion, 2015) is required in order to ensure equitable and quality education for all by addressing emerging local needs.

Based on these theoretical premises, the paper develops a reflection that interweaves teacher education and school improvement (Prenger et al., 2021; Timperley & Robinson, 2001) by proposing action research as a tool for professional and institutional development (Balarin et al., 2008; Gann, 2015). It encourages reflexivity and a change in teachers' frame of reference, making it possible the acquisition of new interpretations of their actions and the renewal of existing ones (Hersted et al., 2019; Robertson, 2000). By involving professionals, it leads to organisational improvement through co-designed paths that bring the perspectives of different actors into dialogue (Cohen et al., 2017; McAteer, 2013). Thus, it promotes teacher protagonism and professional learning (Morales, 2016); moreover, by supporting teachers' active positioning in school governance, it makes the change in school culture and organisation more sustainable over time (Kaluzeviciute et al., 2021; McIntyre, 2007). Ultimately, action research enables the pursuit of equity through institutional responses to the needs arising from the territory, by developing local practices to achieve a global goal.

Keywords: Equity, Action Research, School Improvement.

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From "Meritocracy" to "Meritoriousness": Rethinking Equity in Italian Teacher Education

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This contribution examines the critical role of meritocracy within the Italian educational system, emphasizing its intersection with equity, social justice, and pedagogical practices, based on the premise that providing students with well-prepared teachers is essential to addressing educational inequalities and fostering an inclusive system (Sen, 1999; Nussbaum, 2012). While meritocracy is often viewed as a pathway to fairness, this research highlights its potential to reinforce pre-existing disparities by ignoring the unequal opportunities shaping students' achievements (Young, 1958; Sandel, 2020).

Using qualitative methods, including semi-structured interviews with teachers and school leaders from selected schools in the Bergamo area (the primary setting of the research), this study conducts an exploratory investigation into the risks associated with meritocratic practices in education. While not intended for statistical analysis, these methods provide an initial insight into the dynamics and challenges of meritocracy in educational contexts.

Teachers expressed concerns about meritocracy's focus on standardized achievements, often at the expense of personal growth and contextual understanding (Bertagna, 2020; Xodo, 2017). They pointed out that such practices disproportionately disadvantage students from less privileged backgrounds, thereby perpetuating systemic inequities (Rawls, 1971; Becker, 1964).

The study proposes strategies for a more inclusive education system, including professional development for equity-focused teaching, networks for sharing best practices, and projects valuing diverse talents. Central to this is meritorietà (meritoriousness), which redefines merit as relational and context-sensitive rather than rigid and competitive (Bertagna, 2020; Arendt, 2017).

Framed within Italian educational reform, this perspective advocates holistic teacher training and highlights the need to transcend meritocracy's narrow focus, embracing practices that recognize every student's potential (Sen, 1999; Nussbaum, 2012). By critiquing meritocracy's assumptions, it envisions an education system fostering collective growth and empowering all learners (Freire, 1970; Milani, 1967).

Keywords: Merit, Meritocracy, Teacher Education, Education system, Italy.

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Validation of a Self-Evaluation Tool for Measuring Entrepreneurship Competence in Primary School Pupils

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In this paper, we will present the results of a study focused on validating a self-evaluation tool for measuring entrepreneurship competence in primary school pupils. Entrepreneurship competence, as defined by the European Commission's EntreComp framework, is one of the key competencies for lifelong learning. It encompasses creativity, initiative, problem-solving, and the ability to turn ideas into action. The Czech national curriculum (RVP ZV) has recently emphasized its importance by incorporating it into the broader working competence. However, there is still a lack of standardized tools to assess its development in primary education.

To address this gap, we conducted a study involving 489 respondents from multiple schools. The validation process employed statistical methods such as exploratory and confirmatory factor analysis, internal consistency testing using Cronbach's alpha, and test-retest reliability assessment. Construct validity was examined through correlations with external indicators of entrepreneurial behavior.

The results suggest that the self-evaluation tool is a reliable and valid instrument for assessing entrepreneurship competence in school settings. It allows pupils to reflect on their abilities and progress, providing educators with valuable insights into competence development. The study also highlights the importance of structured support from teachers and school management in fostering an entrepreneurial mindset.

By presenting this research, we aim to contribute to the discussion on measuring entrepreneurship competence and its role in education. A validated self-evaluation tool can serve as a practical instrument for tracking students' progress and integrating entrepreneurship competence more effectively into the curriculum. Future research should focus on refining the tool for broader educational contexts and exploring its long-term impact on pupils' entrepreneurial skills.

Keywords: Entrepreneurship competence, self-evaluation tool, validation.

Active Learning designing biomodels with 3D printing for the application of basic area knowledge in the clinical area

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The advances of the Technological Innovation and Research Project carried out at the National Autonomous University of Mexico, FES Zaragoza, are presented.

The design and production of anatomical structures of patients in dentistry, made in digital and 3D printed format, incorporated into the learning processes in health sciences in stomatology, are considered.

The 3D models (biomodels) have been generated with DICOM data taken from computed tomography scans that are transformed into STL geometry data for 3D printing and their visibility with mixed reality glasses. The biomodels have been tested in small groups; the results have been identified through participant observation, open interviews and online forms, considering the notion of affordances as triggers of interaction for learning, the integration of knowledge for clinical diagnosis and planning of complex treatments in the study of clinical cases and problem solving is encouraged. The construction of maker communities and learning from "students for students" are encouraged. The construction of these educational resources has been a challenge both in breaking down resistance to change and in exploring current technologies for learning.

Keywords: OER, Technologies, 3D Printing, Active Learning.

Universal design for learning and inclusive assessment: how to improve the learning potential of students with special educational needs

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The main goal of this paper is to explore the concept of inclusive assessment and its role in promoting equity in education for students with special needs through the Universal Design for learning. Inclusive assessment design aims to provide all students, regardless of their abilities or backgrounds, with equal opportunities to demonstrate their learning and achievements. It aims to ensure that all students, regardless of their abilities or disabilities, have equal opportunities to demonstrate their knowledge and skills. It involves designing assessment methods that are accessible, flexible, and responsive to diverse learning needs. Inclusive assessment often requires collaboration between general education teachers, special education specialists, and other support staff. Universal Design for Learning (UDL) plays a crucial role in promoting inclusive assessments by providing a framework that ensures all learners can have equal opportunities to demonstrate their knowledge and skills. At the same time its principles of assessment design help to create a more accessible, flexible and equitable method of assessment that takes account of different learning needs and styles. Assessment, in its formative sense, is not a means of exerting power and emphasising difference, but a tool for promoting the inclusion, motivation and personal development of learners. The purpose of this paper is to explore the contribution that the research framework of Universal Design for Learning (UDL) can support for the development of assessment skills and practices. It aims to outline a conceptual and practical framework for a universal approach to assessment that has as its primary purpose the promotion of inclusive processes in school contexts and, therefore, the active participation of all students in the processes and activities that take place within them.

Keywords: Universal design for learning, inclusive teacher, inclusive assessment.

"Yes, I can": effects of video- based learning activities on teacher self-efficacy and comprehension of formative feedback

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Transferring pedagogical ideas from professional development (PD) activities to the workplace can be complex (Darling-Hammond et al. 2017). Classroom videos could support teachers' learning in PD initiatives (OECD, 2020). Simply watching a video is not enough to foster pedagogical understanding or confidence. The impact of videos relies on the implemented learning strategies. Our study tested two strategies: direct instruction (DI) and knowledge construction (KC) (Gentile, 2019; Seidel et al., 2013) on participants' self-efficacy (SE) (Täschner et al., 2024).

The study involved 84 Italian teachers (84.5% female), with a mean age of 38.44 (SD = 6.98); 61.9% worked in middle school, 34.5% in high school, and 2.3% in primary school. They were randomly assigned to the two learning activities. Findings suggest teachers feel more confident in providing feedback after participating in KC. There is a significant difference in SE for KC (M=0.91, SD=2.03) and DI (M=-0.80, SD=3.17), with t=-2.88(71), p<0.05. KC treatment directly impacts the SE score, with evidence that no teacher or contextual factors influence the score or moderate the effects of treatment. This result received 62.9% support from the data and 91.8% when equalizing KC and DI treatments. On average, in KC treatment, teachers reported higher scores (adjusted M=4.84, SD=.80) compared to DI (adjusted M=4.17, SD=1.25) after controlling individual and contextual variables (Gentile et al., 2024). A qualitative analysis confirmed the major power of KC. These findings align with studies showing that teacher education can positively promote TSE (Clark & Newberry, 2019; El-Abd & Chaaban, 2021). It promotes more discussion among colleagues (χ^2 = 4.719, df=1, p=0.030), reflection and conceptualization (χ^2 = 11.007, df=1, p=0.001), comprehension of formative feedback (χ^2 = 9.598, df=1, p=0.002). One limitation is the absence of a third group, which could improve the strength of observed causality.

Keywords: Teacher Self-Efficacy, Professional Development, Videos.

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Parallel sessions (line 4):

Inter and multicultural approaches to education

How do teacher educators in the Global South reflect on their positions and contributions regarding student mobility from Norway?

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Emphasis on the need for Norwegian teacher education students to conduct part of their teacher education program abroad is increasing. Among the arguments for this emphasis is that globally aware teachers have better international and intercultural competence that can facilitate sustainable development and more just education. However, evidence to support those claims is contested (see Klein, Bergersen & Larsen, 2022; Massao & Bergersen, 2024). Moreover, the existing studies focus more on students' experiences and perceptions and little about teacher educators. In this paper, I wish to explore how teacher educators who facilitate student mobility to and in the Global South reflect on their positions and contributions in the field as part of the (de)colonial project and how cooperation partners in Zambia through equal knowledge exchange and positions can contribute to strengthening the quality of student mobility from Norway. I conducted eight qualitative interviews during 2023 and 2024 with five coordinators in Zambia to learn from their reflections regarding student mobility from Norway. The theoretical framework is critical pedagogy (Freire, 2000) and de-colonialization (Mbembe, 2022; Mignolo, 2007; Quijano, 2000) analyzing power, positions and pluriversity in international cooperation. Our findings indicate the reproduction of colonial structures and more academic responsibility to colleagues in Zambia, and they suggest adequate preparations with specific learning outcomes to increase the quality of student mobility.

Keywords: student mobility, de-colonialization, Zambia.

Intercultural Competence in Multicultural Classrooms: Perceptions of International PhD Students in Hungarian Universities

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In an increasingly globalized academic environment, multicultural classrooms represent vibrant spaces of intercultural communication, where diverse perspectives converge and interact. This study investigates the dynamics of intercultural competence in PhD classrooms across Hungarian universities, with a focus on how cultural differences influence classroom interactions, teaching methods, and learning styles. The research draws on qualitative data from in-depth interviews and classroom observations involving 15 international PhD students enrolled in diverse disciplines such as education, social sciences, and humanities. Respondents highlighted the multifaceted challenges they faced in these multicultural academic settings, including communication barriers and diverse expectations regarding classroom participation. For instance, students from hierarchical cultures often reported hesitating to question professors, whereas peers from egalitarian cultural backgrounds felt more at ease engaging in critical debates. Similarly, learning preferences varied widely, with some respondents favoring collaborative group work while others preferred independent study. Teaching methods also emerged as a critical factor in shaping students' classroom experiences, while many professors relied on traditional lecture-based approaches, some respondents appreciated educators who incorporated participatory methods, such as discussions or case studies, which fostered inclusivity and mutual understanding. The study also revealed that language barriers occasionally hindered effective communication.

Despite these challenges, students identified opportunities for personal and academic growth. Many respondents reported developing intercultural competence through informal interactions with peers, cross-cultural group projects, and exposure to diverse viewpoints. Additionally, universities that provided intercultural training, mentorship programs, and extracurricular activities were perceived as more supportive in fostering inclusive environments.

This study underscores the complexity of intercultural communication in multicultural PhD classrooms and emphasizes the need for adaptive teaching strategies that respect and incorporate cultural diversity. The findings provide actionable insights for educators and policymakers seeking to enhance intercultural competence in higher education, highlighting the importance of creating learning environments that are both inclusive and globally responsive.

Keywords: Intercultural Competence, Multicultural Classrooms, Cultural Diversity.

Competencies of future teachers to work in a culturally diverse school environment. Experiences and perspectives of education students from different countries

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The aim of the study was to identify the competencies of future teachers for working in a culturally diverse school environment, with particular emphasis on the experiences and perspectives of education students from different countries. In the era of globalization and migrations, cultural diversity in classrooms is becoming increasingly common, and teachers must possess the necessary competencies to work effectively with students from various cultural backgrounds. The study involved a survey with open-ended questions directed at education students who expressed a willingness to share their opinions on their own skills and preparation for working in a multicultural environment.

The results indicate that education students are aware of the importance of competencies needed for working with cultural diversity, yet they still perceive a gap in their theoretical and practical preparation. Most of the respondents speak about training of intercultural competences. Many respondents emphasize the need for more diverse training and workshops that would help them better understand the specifics of working in culturally diverse classrooms. There is also a clear difference in perspectives depending on the students' backgrounds, which may suggest the need to tailor educational programs to different cultural contexts.

The conclusions of the study can contribute significantly to the development of more effective teacher education programs that will better prepare teachers for working in culturally diverse classrooms, as well as to the creation of tools supporting the development of intercultural competencies among future teachers.

Keywords: cross-cultural competences, teacher education, multiculturalism.

Global Drivers of change in TE: Skills of the Future from International Education Policy Perspectives

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This paper joins in academic discussion of future education from the skills development perspective. It becomes important to understand the main drivers of change taking place under the influence of industrial revolutions at global and national levels and their impact on the education system.

The problem of the skills gap, which is at present faced by world organisations, is being analysed, trying to clarify global drivers of change in labour market and macrotrends influencing education system and teacher education. To clarify the core skills to be developed by organisations (economic and educational) in the future to close the existing skills gap, in order to meet the needs of organisations to move forward, be competitive and able to successfully implement the rapidly developing digital technologies.

Methods. The employed qualitative research methodology aims at analysis of international education policy focused on the future developments of education, responsible for training of future specialists, including teachers.

Results. The analysis of the skills gap appearance and strategies employed by organizations for closing it. Future-oriented visions, global drivers and macrotrends of change from international education policy perspectives presented by international organisations (WEF, OECD, UNESCO), core skills to be developed in the future are presented, trying to answer the questions: Are future-oriented strategic foresight and international education policy initiatives going to take into consideration the challenges, the new generations will face in the future? Will the future-oriented strategies and recommendations for to-be-developed future skills be suitable to deal with future challenges? Conclusions are drawn based on research findings and conducted analysis discussed in this paper.

Keywords: international education policy perspectives, skills gap, closing of skills gap.

Person-centred pedagogy in vocational education – according to Hungarian Kolping students' views

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Role players of education agree that regardless of schools' pedagogy, focusing on individual development is essential for achieving academic achievement and shaping young people's future aspirations (Seitamaa & Hakoköngäs, 2024, Tielman et al., 2012). However, in the case of VET, considering the training conditions and the differences in the atmosphere between classroom and practical training, the implementation of an educational pedagogy can face a number of difficulties (Mutohhari et al, 2021, Martínez-Morales & Marhuenda-Fluixá, 2020). However, Kolping vocational schools in Hungary aim at a holistic education of students along four pillars, with the principles of the 19th century priest and the Kolping Movement's founder, Adolf Kolping. Kolping schools aim to prepare students for family life, emphasize the importance of professional skills, and primarily use community resources to do so, in addition to faith-based education. They work in a multicultural environment with Hungarian and Roma young people, many of whom are from a multiply disadvantaged background. The role of denominational institutions in compensating for disadvantage has been demonstrated by numerous studies (Pusztai, 2014, Pusztai, 2001, Bacskai, 2015, Pusztai & Bacskai & Morvai, 2021), as well as the role of the religious institutions in the development of communities. Kolping institutions have half the Hungarian national average in drop-outs, and are considered to be a school of the last after last chance, where pupils with special needs can find their place. Our research was based on ethnography and questionnaire surveys in 21 secondary schools in Hungary. We analyse Kolping pedagogical methods and their effectiveness in a cross-sectoral comparison. Our analysis shows that students in church schools are more connected to their institutional community than students in the public sector. And in terms of further education, we find that Kolping students are more likely to imagine their future in vocational education after their school-leaving exams, while students from other denominational schools are more likely to imagine their future in higher education. In terms of social involvement, we find that in all three sectors the majority of students are preparing for active community work, although students from other denominations and the public sector would be more likely to undertake tasks that are useful for society, compared to Kolping student.

Keywords: person-centred pedagogy, vocational schools, vocational pedagogy, education in secondary schools, Kolping schools, Kolping education.

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Satisfying the Beginning Teachers' Professional Needs- The DigitalTA Platform as a Mentoring Model

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The OECD report (Guerriero, 2017, p. 259) demonstrates teachers' competence as a multidimensional construct and emphasizes the need for comparative studies and designing instruments to improve teachers' work. However, teaching competence can only be developed through practice (Knight, 2002, p. 230) and participating in activities in the working community. Thus, it is highly important to identify teachers' professional needs and kinds of support NQT can get during the induction process. The analyzed literature from Belgium, Ireland and The Czech Republic and the data from comparative research in Poland and Spain, conducted among 134 participants with a use of a questionnaire, show that similar needs among NQTs appear in all countries, although with different frequencies. Respondents expect the greatest support in the following areas: classroom management, inclusive education, individualization, workload, well-being and work-life balance, cooperation with others, self-government and independence, as well as job security.

One way to solve some of the problems is to create communities and support networks associating people and institutions with different practical experience and approaches to educating teachers, including researchers and employees of teacher training centers, as well as teachers themselves. Therefore, the European Commission created so-called Teacher Academies in the development plan for the European Education Area as part of Erasmus+ projects. As an example of such academy the speaker will present the project titled *Digital Academy in teaching project Practice for a seamless process transition from pre -Service to in-Service*. The outcome of the project is the digital platform used by teachers for peer learning and mentoring. The evidence-based platform is built as a beehive model and applies methodology of problem-based learning (PBL), mentoring, case studies and supporting the teacher's self-reflection.

Keywords: beginning teachers, mentoring model, educational platform.

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Empowering Cocreation in Teacher Education: Designing Tools and Strategies with Viacocrea technology

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Fostering students' cocreativity has become a central objective in global education, particularly in generating innovative solutions to complex global challenges. Interactive technologies play a vital role in this process by supporting all stages of cocreation, nurturing creative mindsets, and enabling meaningful dialogue.

Despite this potential, educational research highlights three major challenges to promoting cocreation in everyday classrooms. First, there is a need for pedagogical approaches that can overcome barriers such as rigid curricula, time constraints, and limited space, which often restrict creative practices. Second, creativity-oriented pedagogy must be embedded in teacher education to ensure future educators are equipped to support cocreativity. Third, there is a demand for evidence-based technological tools that effectively foster group creativity and support the joint development of new ideas and solutions.

To address these challenges, the Viacocrea platform has been designed and implemented in real-world classrooms. This innovative technology offers teachers and students a collaborative, multi-user, and synchronous environment tailored to tackle complex problems. Viacocrea structures the cocreative process into six distinct phases and enriches each phase with a wide range of accessible creative techniques. It further supports students' cocreative engagement through curated resources such as video tutorials and infographics, which are carefully crafted to foster creative dialogue and guide both divergent and convergent thinking processes.

Viacocrea aligns with the priorities of 21st-century education and has been successfully introduced into pre-service teacher education programs. It helps future educators and students alike to engage in cocreative learning experiences and develop key skills for collaborative innovation.

In this presentation, I will first describe the design-based research approach that guided the development of Viacocrea. Then, I will present the platform's key design features. Finally, I will showcase its implementation in teacher education, demonstrating how it enables students and teachers to cocreatively generate innovative responses to complex disciplinary challenges.

Keywords: Creativity, Collaboration, Technology.

Developing English Language Teacher Candidates' Intercultural Communication Skills via the ENACT Web App

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Digital language learning provides an immersive context for language learners to engage in intercultural communication (Liaw, 2019; Dooly & Vinagre, 2021). This study investigates the impact of a digital tool, the ENACT web app (Communities, Languages, and Activities), on intercultural language learning from the pre-service English language teachers' perspective. The ENACT web app, which embraces the intercultural, digital, and communication skills of language learners, aims to develop their intercultural awareness and understanding through two-way knowledge-generating task-based activities. Ten pre-service English language teachers, who participated in the project as workshop facilitators, were initially engaged with the web app as users by completing a 2-week online training. After the training, they facilitated intercultural pairs to produce cultural activities in a task-based digital learning pedagogy in 3-5 hour sessions. To this end, this study presents mixed-method research with quantitative survey data and qualitative reflections of the pre-service teachers: (1) descriptive scores from pre and post-training responses to digital skills assessment and cultural awareness questionnaires, (2) reflective answers to open-ended questions about their gains in the e-portfolio in the middle and end of the online training, and (3) final reflection papers on intercultural understanding after the facilitation of the workshops. The survey findings showed that the pre-service teachers increased their cultural and digital knowledge through digital materials on the web platform. The thematic analysis of the reflections also indicated that they found the use of the task-based language teaching methodology effective in offering an interactive learning experience and enhancing learner involvement. The study suggests that integrating cultural tasks into the curriculum for language learning offers real-life learning experiences and contributes both to the language and content knowledge of the students.

Keywords: Technology-mediated task-based language teaching, intercultural communication, teacher education.

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Culture in EFL Teaching: Perceptions, Challenges, and Competence of Pre-Service Teachers

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The shift toward communicative methods in English as a Foreign Language (EFL) teaching has long emphasized the role of culture. Numerous questions have been explored, including how culture is defined, how it can be integrated into EFL instruction, which cultural elements should be included, how to raise awareness, and how students and teachers perceive its role. Despite a substantial body of research, these debates remain unresolved. This study aims to investigate pre-service EFL teachers' perceptions of culture, its integration into the language classroom, and the alignment (or misalignment) between their perceived intercultural communicative competence (ICC) and their ability to analyze a culturally rich text.

The study was conducted with 54 pre-service EFL teachers using an open-ended questionnaire to collect qualitative data. A thorough content analysis of the responses revealed that participants hold highly favorable views on the integration of culture in language teaching and express a strong willingness to use authentic materials in their instruction. They perceive culture as an essential aspect of a community's life and recognize the close interconnection between language, literature, and culture. However, despite their positive attitudes, the findings indicate that they struggle to identify cultural elements, critically engage with them, and discuss their potential applications in the classroom. This reveals a mismatch between their perceptions of ICC and their demonstrated analytical skills.

The findings suggest a need for further training to enhance pre-service teachers' ICC. Teacher education programs should incorporate both theoretical and practical courses to equip future educators with the necessary skills and knowledge for effectively integrating culture into EFL instruction.

Keywords: Intercultural Communicative Competence, pre-service teacher education, integration of culture in EFL contexts.

Intercultural and Decolonial Teacher Education: Theoretical Insights from the Legacy of bell hooks

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The complexity and heterogeneity of our societies makes pluralism an everyday experience (Goodenough, 1974), even at school (Pratt, 2007). This is nothing new, but it still proves necessary to reflect on how to deal with differences without rhetoric and through pedagogical approaches that grasp human unity in human diversity and vice versa (Morin, 2008; Ogay & Edelmann, 2016). Epistemologically, intercultural education has long been committed to indicate postures and attitudes to manage this delicate balance (Coulby, 2006; Gorski, 2009). However, it is urgent not only to affirm the need for authentic dialogue between cultures, but especially to support a decolonization of minds that leads to a problematization of dominant narratives and a systematic reclaiming of space and voice for marginalised groups (Aman, 2017; Guilherme, 2019).

Based on these premises, this paper presents theoretical reflections on teacher education: what principles should define it to foster an intercultural and decolonial attitude among professionals? How could it support teachers in fulfilling their role as agents of social and political change? The analysis is based on the legacy of bell hooks (1994; 2003; 2004; 2010) and revolves around four thematic cores: (1) pedagogy of love and empowerment; (2) decolonizing knowledge and curricula; (3) critical and dialogical approach; (4) awareness of intersections of oppression.

Ultimately, intercultural and decolonial teacher education must challenge the power structures that govern the production and transmission of knowledge, questioning who has the right to speak and which narratives are systematically silenced (Domínguez, 2021; Zembylas, 2023). Following bell hooks, it is crucial to rethink educational relationships that are no longer based on hierarchical dynamics, but on authentic and transformative interaction between teachers and students (Vavrus, 2017). In the face of persistent inequalities, teacher education must be understood as a political act to build a more just and plural society.

Keywords: Intercultural Education, Decolonial Education, bell hooks.

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Nurturing Plurilingualism: A Pilot Project in Intercultural Pedagogy at an Italian Secondary School

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This paper presents findings from a 2022–2023 pilot project in an Italian upper secondary school aimed at fostering intercultural pedagogy and developing plurilingual competences. Drawing on Garcia and Li Wei's (2014) framework, the initiative sought to create a learning environment in which students' various languages coexist and interact naturally. By focusing on a single school context, the study offers a nuanced perspective on how national policy directives are translated into everyday practices— an important lens given that many Italian schools face challenges in effectively implementing intercultural and plurilingual strategies.

Building on Booth and Ainscow's (2011) emphasis on organizational transformation, the project introduced innovative changes in school culture, practices, and policies, guided by the principles of linguistic justice and democracy (Van Parijs, 2011). Key strategies included teacher training, Erasmus+–funded student mobility opportunities, and the dissemination of pedagogical methods supporting language diversity. The initiative addressed the persistent risk of academic underachievement among migrant-background students while capitalizing on external resources to enhance internationalization and intercultural competence.

Researchers from the University of Turin, including the author, actively contributed to the project's design, implementation, and evaluation, employing semi-structured interviews and participant observation to investigate reactions to the pilot initiatives. By examining project data and providing interpretative insights, this study advances policy recommendations for improving pre-service teacher training and strengthening institutional support of intercultural pedagogy and plurilingual education. The findings highlight the transformative potential of targeted, context-sensitive initiatives in building equitable and inclusive educational environments.

Keywords: intercultural pedagogy, plurilingual competences, participant observation.

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Shadow Education: Concept Analysis

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This research presents the phenomenon of shadow education. The aim of the study was to analyse and conceptualise the concept of shadow education, to reveal the main characteristics, assumptions, and consequences of the concept, based on the analysis of scientific publications by Lithuanian and foreign authors, using data collection and data analysis methods. Based on Walker and Avant's (2005) research strategy, it is revealed that shadow education is a complex, interdisciplinary and complex phenomenon, encompassing all paid direct and indirect measures and activities, which are carried out outside of formal education, but within the framework of the formal curriculum. It also identifies the main characteristics of informal education as complementary, private, competitive, dependent on formal curriculum, compensatory, diverse in its forms, intensity, providers, flexible and adaptive, global, unregulated, and considered as activity. The main prerequisites identified are the desire on the part of parents and children to improve their academic performance, to close learning gaps, to maintain or improve their social position in society or, on the part of educators, to engage in profitable activities, to change the form of employment. Positive and negative consequences of informal education have been identified in terms of social inequalities, commercialisation of education, family relations, children's development and learning support. One of the global issues that has been highlighted is that, while international law recognises the responsibility of the state to intervene in the private sector in relation to the quality of teaching, although a greater proportion of governments take a laissez faire approach to the tutoring sector. This leads to a conflict in the political, educational and legal field on how to ensure social equality and equity, full access to education and the implementation of international and national law on the right to education when private tutoring is poorly regulated.

Keywords: shadow education, supplementary private tutoring, concept analysis.

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Women Scientists and Extended Reality: university education through the MEREVIA project

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Extended reality (ER) applied to education enables the creation of immersive and personalised learning experiences and, in turn, enriches the educational process and enhances knowledge acquisition. Such immersive experiences in the educational environment are based on elements of action, social, symbolic/narrative and sensory stimuli. Action allows participants to perform actions with novel consequences, social involves reasoning and decision-making in virtual environments, narrative/symbolic triggers semantic associations through the content of the experience and sensory immersion integrates the senses into the virtual space through peripherals. The project "*MEREVIA: The Metaverse: Extended Reality (Virtual and Augmented) in higher education: design, production, evaluation and training of extended reality programmes for university education*" (https://merevia.es/). The main objective is to design and create objects in RE for university education in different curricular areas, through design-based research. An example of these objects is the object of women scientists in the street map of Seville (https://innova01.us.es/cientificassevillaid/). This object consists of three sections: biographical presentation of women scientists, social and historical events of relevance for the city of Seville that occurred during the lives of the chosen women scientists, and finally the recognition given by the city to these women scientists (street, square or park). After the design and its application, we proceeded to evaluate it and its implication in university education. The results obtained show the usability of the object for educational purposes, the relevance of the contents and the positive and motivating attitude towards the use of this type of technology (RE) in the classroom.

Keywords: extended reality, higher education, training.

"Global South" and "Global North" in teacher education: A critical discussion of a longstanding partnership between Norwegian and Namibian institutions in higher education

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Arising out of local solidarity initiatives in the Inland region of Norway in support of the Namibian independence struggle, the collaboration between the teacher education programme at Inland Norway University (INN) and educational institutions in Namibia, including the University of Namibia (UNAM), has in the decades since independence developed into professional and academic partnerships that remain strong and vibrant today. The mode and content as well as the actors have changed, but education and teacher education have always been at the nexus of the collaboration. The collaboration has changed from a one-way sending of Norwegian students on teacher practicums to Namibia to an increased focus on a broader sense of cooperation, including student and staff exchanges both ways, and joint research and educational projects. In this paper we critically examine and contextualize the collaboration between the various institutions in Norway and Namibia, in particular INN and UNAM. We will describe and reflect upon strategic steps taken to ensure a sustainable partnership that has sustained for more than 30 years, but also analyse and discuss the different modes of cooperation in a critical reflective perspective with special emphasis on trends within development aid and education policy strategies in Norway, internationalization trends in higher education, and post-colonial theory.

Keywords: postcolonial perspectives, global north-south collaboration, teacher education.

The "Five Cs" of Cultural Immersion: Maximizing Student Teachers' Intercultural Experiences in Classrooms and Communities Worldwide

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It is increasingly common for teacher education programs to offer intercultural field placements as a means of developing students' global competencies, including the ability to establish positive interactions with people whose backgrounds differ from their own, and to understand and appreciate different perspectives and worldviews. However, merely placing students in culturally different settings is insufficient and may in fact contribute to surface-level observations, the development of stereotypes, and reinforcement of the notion that one's own cultural background is superior. A mindful application of the "Five Cs" of cultural immersion – Communication, Connections, Comparisons, Cultures, and Community – to students' preparatory and onsite requirements provides the structure, scaffolding, and supports necessary to maximize the transformative professional and personal learning that future educators can gain in intercultural experiences, in both school and community contexts. The Five C framework guides program development and contributes to a trajectory of continued learning and growth, even after the intercultural placement has concluded.

This presentation will include a description of the Five C framework and how it has been applied to a successful intercultural student teaching program that has recently marked its 50th anniversary in its home university. Specific examples will be shared of learning activities and written reflections that draw on the Five Cs across the preparatory and onsite phases of the program, including the signature service learning project. A critical element involves the placement community as a vital source of engagement and learning, extending student teachers' "immersion" experiences beyond the walls of the school building and into the neighborhoods that the school serves. Outcome data will be provided as evidence of the impact of well structured "immersion" experiences on future educators' professional practices and personal choices.

Keywords: Student Teaching, Intercultural Experiences, Curriculum Development.

We are neither tiger nor panda parents: Exploratory study of contemporary parenting styles in Tanzania

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Empirical evidence have documented the importance and relevance of different parenting styles on early child development and learning. However, most of the available evidence are from Western, Educated, Industrial, Rich, and Democratic (WEIRD) countries (Henrich et al., 2010a). There is limited evidence from the Global South which hosts almost 70% of global children population. The aim of this study was to examine the differences in parenting styles between fathers and mothers and to identify the dominant parenting profiles in a sample of preschoolers' parents from both urban and rural Tanzania. The study involved 200 couples, each from rural and urban areas of Tanzania, who completed a parenting style questionnaire. Additionally, ten couples were interviewed to gain further insights into their parenting approaches. The data analysis included a paired t-test to examine inter-parental differences and cluster analysis to identify major clusters of parenting profiles.

The results revealed that mothers were generally more authoritarian than fathers, showing a significant difference in their parenting approaches. The study identified three major clusters of parenting profiles: easy-going parenting, tiger parenting, and supportive parenting. These profiles represent different parenting styles observed in the sample, with easy-going parents demonstrating a more relaxed approach, tiger parents being stricter and more demanding, and supportive parents offering nurturing and encouraging behavior. The findings also highlighted inter-parental differences within the couples, with distinct patterns of parenting emerging. The study found that 'tiger moms'—more controlling and disciplinarian—were commonly paired with 'panda dads,' who exhibited more lenient and supportive characteristics. These patterns of inter-parental differences suggest that even within the same family, distinct parenting approaches can coexist, particularly in the context of urban and rural settings in Tanzania. Overall, this study provides valuable insights into the diversity of parenting styles in Tanzanian families and highlights the importance of understanding these variations to better support early childhood development.

Keywords: Parenting, Parent-school partnership, learning variability.

Mathematical Task Design and Assessment in Irish Medium Education: Unanticipated Language Challenges and Implications for Immersion Contexts

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Authentic teaching and assessment of mathematical competence is a practice with strong potential benefits for primary school teachers (Palm et al, 2017). Immersion education, in which the children and indeed teachers, may be operating in a second language, is a particular context with unique demands (Leung & Mohan, 2004). This paper reports on an unanticipated language focus which emerged from classroom teachers' participation in a project in primary Irish Medium Education (IME). The focus of the project was on the evaluation of high-quality mathematical tasks for the purposes of rigorous and authentic assessment. A suite of high-quality mathematical tasks were developed in response to the publication of a revised curriculum (Government of Ireland, 2023), which maps mathematics content to process skills aligned along learning trajectories (Clements & Sarama, 2004) called 'progression continua' in the Irish curriculum. Assessment rubrics, linking responses to the tasks to points on the progression continuum accompanied this, with the aim of assisting teachers in formatively assessing mathematical learning. The task evaluation phase consisted of supporting teachers to implement a task with their class, which was observed by members of the research team. Feedback was sought in the form of post-lesson semi-structured interviews. Transcripts of the interviews were thematically analysed (Braun & Clarke, 2007). This paper reports on the actions taken by teachers to mediate the language of the task which emerged in the lessons, and varied in their form. Decisions to pre-teach mathematical language, judged to be necessary to complete the task, and the omission of contextual scenarios emerged in the teachers' practice. Implications for task design and assessment are presented in the context of IME which may be of interest to, and applicable to, immersion contexts globally.

Keywords: Immersion education, mathematical task design, formative assessment.

Relationship between Specialized Whole Number Knowledge and Representations in Whole Number Instruction: Comparison of Caucasian and Latino Preservice Teachers

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Specialized content knowledge could shape teachers' representation uses and teaching quality (Hill, Ball & Schilling, 2008). Ethnic experiences could shape their learning to teach (Bey, Blunck, Lewis & Hicks, 2011). This study examines these assumptions, drawing on data from Caucasian and Latino preservice teachers regarding whole number (Thanheiser, 2009).

Specialized content knowledge conception guided pre- and post-assessment design measuring participants' specialized content knowledge (Hill et al., 2008). Representation conception guided the coding system design to capture participants' uses of realistic, verbal, pictorial, concrete, and symbolic representations in teaching (Lesh, Post & Behr, 1987).

The study included 69 Caucasian and 17 Latino elementary preservice teachers. It collected preand post-module assessments on specialized content knowledge and their lessons on whole numbers. Paired t-tests on pre- and post-assessments were conducted to identify differences between the two groups. Different kinds of representations developed in the lessons were coded, and independent samples of t-tests were used to detect differences between the two groups. Correlation analyses were conducted between participants' post-assessment of specialized content knowledge and frequent uses for different representations for each group.

The study found that the methods course improved Caucasian and Latino 'participants' specialized content knowledge. Both groups most frequently used pictorial, symbolic, concrete, and verbal representations in the order with no significant differences. Specialized content knowledge rarely influences the frequent use of pictorial, concrete, and verbal representations for both groups. However, Latinos' specialized mathematics knowledge was negatively related to their use of symbolic representations, while it influenced little Caucasian's use of such representations.

The study confirms that methods courses could shape preservice teachers' specialized mathematics knowledge regardless of ethnic background. It challenges that developing specialized content knowledge shapes teachers' teaching quality (Davis & Maher, 2013). It helps develop policies and practices effectively improving preservice teachers' specialized content knowledge and representation uses.

Keywords: Preservice teachers, ethnic backgrounds, specialized content knowledge representation uses.

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I do not care if you are from Ukraine. But maybe, does it matter after all. Quasi-experiment among Czech pupils

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After the full Russian invasion of Ukraine in 2022, the proportion of foreigners from Ukraine in the Czech Republic increased significantly. Within a short period, the Ukrainian minority became the largest in the country, and due to the nature of migration, women with children or entire families often arrived. This led to a rapid and unprecedented rise in the number of foreign pupils in Czech schools, posing a major challenge for the entire education system and its stakeholders. At many schools, staff endeavoured to create the best possible conditions for the adaptation process of these pupils, which was also supported by the positive efforts of majority pupils. These efforts were in line with the support from the majority society in the Czech Republic. However, after three years of war, attitudes and narratives within the majority society have partially changed, which may also be reflected in the youngest members—children in primary and lower-secondary schools. Therefore, the aim of our ongoing research is to examine whether Czech pupils respond differently to Ukrainian pupils in certain situations compared to other majority or minority pupils. To achieve this objective, we have chosen a quasi-experimental design. The research sample consists of randomly selected Czech pupils in the second stage of lower secondary school (6–9 grade) from four schools involved in a broader research project. The data have been statistically analysed. In this contribution, we will present the process of designing our quasi-experimental research, the realisation process, and the initial findings. The results will help identify potential barriers in the adaptation process of Ukrainian pupils and highlight the need for working with pupils on the path towards an inclusive education.

Keywords: quasi-experiment, foreigners in schools, Ukrainian pupils.

Enhancing Peer Assessment skills in higher education within a Collaborative Online International Learning (COIL) experience between Italy and Finland

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Collaborative Online International Learning (COIL) is an educational approach in which instructors from different institutions collaborate to design and co-teach courses, allowing students from both institutions to participate (Ingram, 2021). Since its introduction in 2006, COIL has gained popularity, promoting personal and professional development and preparing students for diverse, multicultural work environments (Rubin, 2017; de Castro et al., 2018). Educational research highlights the increasing importance of peer assessment in supporting students' learning processes, particularly in higher education, where students need guidance to manage their learning independently (Thawabieh, 2017; Ndoye, 2017; Hattie & Clarke, 2018; Sambell et al., 2017). Despite challenges such as different time zones, languages, and limited time, digital technologies offer interconnected spaces for resource sharing, interaction, and feedback exchange (Boud & Molloy, 2013).

This study aimed to explore how an international collaborative environment can enhance students' peer assessment and the role of online peer and group activities in improving the process. It involved 34 students—24 Italian from the University of Genova and 10 Finnish from Haaga- Helia University—participating in a COIL activity focused on the educational field, facilitated through synchronous and asynchronous sessions on Microsoft Teams. The activity took place in the first semester of the academic year 2024/2025. At the end of the peer assessment and group assessment activities, students completed two questionnaires with three open-ended questions to identify the aspects most relevant in improving their peer assessment skills.

The data analysis revealed that international online collaborative activities significantly enhance students' peer assessment abilities, especially by promoting intercultural exchange, encouraging critical thinking, and fostering the effective use of digital tools for collaboration. These findings emphasize the value of COIL in developing essential skills for students in a globalized educational context.

Keywords: Peer assessment, Higher Education, Collaborative Online International Learning (COIL).

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Anti-racism in sites of initial teacher education in Ireland

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Racism is prevalent in Irish schools (Devine, 2013; Garratt 2019; McGuirk, 2023). Approximately 99% of primary school teachers in Ireland are White, Irish and from the settled community and they are teaching in classrooms that are increasingly racially and ethnically diverse (Heinz and Keane, 2018; Ní Dhuinn and Keane 2021). This mismatch in racialized identities can impact on how primary teachers engage in anti-racism education (McGuirk. 2023).

Sites of initial teacher education are well placed to guide student teachers to develop the racial literacy needed to embed anti-racism education in their practice across all class levels. However, research indicates that sites of initial teacher education do not adequately prepare students in areas such as diversity, racism and intercultural education (Bhopal and Rhamie 2014; Hannigan, Faas and Darmody 2022). Thus, considering the racialized identities of the overwhelming majority of teacher educators, teachers and student teachers, it is important to reflect on and explore how sites of initial teacher education support student teachers to engage with racisms and to teach about, through and for anti-racism. Underpinned by the theoretical frames of critical whiteness studies and critical multiculturalism, this presentation outlines the steps undertaken by a cross-institutional working group of academics as they move towards the development of an anti-racism charter for sites of initial teacher education in Ireland. It details the rationale, purpose and focus of events that brought educational stakeholders together in a reflective and dialogical space that emphasises the role of allyship and action. The presentation shares details of a new publication that captures the critical discussions and reflections that are central to embedding anti-racism as a fundamental aspect of teacher education in the Irish context. It outlines preliminary findings of an ongoing mixed-method research study (surveys, interviews, reflective statements) that aims to explore the anti-racism education perspective practices and experiences of teacher educators and other educational stakeholders in Ireland.

The forthcoming publication and the affiliated research will contribute to both national and international academic debates regarding anti-racism and anti-racism education in initial teacher education. This has potential impacts as teacher educators engage in praxis and enhance student teachers' understandings and engagement with anti-racism.

Keywords: anti-racism, initial teacher education, allyship.

«On the Road to Inclusion of Ukrainian Refugees in Czech Lower-Secondary Schools» – A Research Project Supported by the Czech Science Foundation

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Since the Russian invasion of Ukraine in 2022, the number of Ukrainian refugee students in Czech lower-secondary schools has significantly increased, now comprising 3.7% of all students. This influx presents challenges in language acquisition, social integration, and academic support, requiring schools to develop inclusive strategies. This research, funded by the Czech Science Foundation, examines the efforts of Czech schools in integrating Ukrainian students and aims to provide practical recommendations for improving inclusive education. The project is being implemented by a team of young researchers from the Department of Education at the Faculty of Education of Masaryk University (Brno, Czech Repablic).

The study is based on contemporary theories of inclusive education, particularly the principles of equity, accessibility, and social belonging. The research adopts a multiple-case study approach, combining qualitative and quantitative methods, including surveys, interviews, focus groups, classroom observations, and a quasi-experiment.

The project, running from January 2025 to 2029, consists of three key stages:
(1) Pilot Study (2025-2026) – a preliminary analysis in selected schools in the South Moravian Region, including focus groups with teachers and an online survey of 300 educators to refine research tools;
(2) Main Data Collection and Analysis (2026-2028) – semi-structured interviews with school administrators, teachers, students, and parents, along with longitudinal tracking of inclusive practices in participating schools;
(3) Follow-up and Policy Recommendations (2028-2029) – a second survey to assess changes over time, comparative analysis, and dissemination of findings through five scientific publications (two JIMP, three JSC) and presentations at national and international conferences.

By systematically analyzing the evolving inclusion efforts, the project will contribute to developing sustainable strategies for integrating Ukrainian students, benefiting both refugee and local students in the Czech education system.

Keywords: Inclusion, Ukrainian Refugees, Lower-Secondary Schools.

A focused methodological analysis of studies on foreign language teachers' inclusive language pedagogical practices

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Education systems are confronted with increasingly complex challenges due to the growing diversity of learner groups. This change is especially noticeable in the field of foreign language teaching, where the different abilities, prior language knowledge and socio-cultural backgrounds of students require new approaches (Borg, 2006). As a consequence of increasing learner heterogeneity, a growing amount of academic work is focusing on the problems this phenomenon causes, how teachers respond to it and what solutions are potential in foreign language teaching. The challenge for teachers is not only to meet these needs, but also to reflect on their own practice and methodology, and to adapt to different teaching situations (Darling-Hammond, 2000).

In the present research, we aim to examine, within a professional framework, the research methodological approaches used by researchers in the international and national context to analyse this topic, using the PRISMA model and a systematic literature analysis method. Creswell (2016) highlights the role of qualitative research in particular as significant, as they allow for a deeper understanding of pedagogical processes, exploring teachers' experiences and developing strategies to effectively address the diversity of learners. It also emphasises that interview-based research can provide detailed insights into the experiences of learners and teachers and can contribute to the development of pedagogical methods. Another relevant observation is the methodological characteristics of qualitative, interview-based research and determining when it is most useful. In our research we used the databases of ERIC, FIS Bildung, das Informationszentrum für Fremdsprachenforschung and OPKM (National Educational Library and Museum, Hungary). We conducted a multi-stage screening process and examined 12 publications in specific detail. The studies provided insights into the most common research methodology choices in the field, the diversity of qualitative research and how qualitative researchers ensure the reliability and validity of their studies.

Keywords: heterogeneity among students, foreign language teaching, research methodology, focused literature review.

Beyond the Single Story: Fostering Empathy, Inclusion, and Compassion through Personal Narratives and Perspective Consciousness

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In today's society, there is a growing lack of empathy and compassion for individuals whose experiences and identities differ from ours. This challenge is particularly evident in classrooms where students often struggle to understand perspectives outside their lived experiences. To address this issue, we introduce the concept of the "single story" (Adichie, 2009).

A single story is a narrow, one-dimensional representation of a person or group, often perpetuated through stereotypes or oversimplified narratives. Adichie (2009) highlights how the dominant single stories we hear about others can prevent us from seeing the complexity of their lives. For example, the portrayal of immigrant communities in the media often focuses on negative aspects, ignoring the full richness of their stories and contributions. Unveiling the single story in our teaching reveals the inherent dangers of oversimplification and dehumanization of others, leading to the perpetuation of biases, misunderstandings, stereotypes, discrimination, and exclusion.

Conversely, sharing diverse, multifaceted personal stories fosters greater understanding, acceptance, empathy, and connection. By actively seeking out and listening to the varied narratives of those around us, we can expand our perspective and challenge our assumptions. As educators and advocates for social change, we embrace the power of these diverse voices and create spaces where students can share their own experiences and thoughts without fear of judgment.

This presentation explores the impact of sharing single stories in our classrooms. We discuss how this practice can lead to greater perspective consciousness within our students, encouraging critical thinking and fostering a culture of empathy, respect, inclusion, and belonging.

Student learning outcomes include a greater understanding of the dangers of the single story, greater recognition of its potential for expanding perspective consciousness in our practice as teachers, and fostering advocacy among teacher candidates supporting respect and inclusion in our schools and our lives.

Keywords: perspective consciousness, inclusion, stereotypes.

Parallel sessions (line 5):

Innovative ways for teacher education

Peer-Learning and Symmetry in Teacher Professional Development: A Case Study from Institut Angeleta Ferrer

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In a rapidly evolving educational landscape, teacher professional development must go beyond traditional training models to foster sustainable and equity-driven learning environments. At Institut Angeleta Ferrer, we have developed an innovative professional development program aimed at experienced teachers, positioning them as key agents of educational transformation within the system.

Our approach is based on three core principles: peer-learning, reflective practice, and the concept of symmetry, ensuring that teacher development mirrors the pedagogical principles expected in student learning. Rather than relying on hierarchical models where external experts train teachers, our program fosters collaborative professional growth through structured teamwork, interdisciplinary dialogue, and shared leadership. Teachers engage in learning circles, professional support conversations, and self-directed learning pathways, promoting autonomy, responsibility, and continuous improvement. These initiatives are grounded in motivation and human development theories, acknowledging that educators thrive when they take ownership of their learning within a strong professional community.

By integrating educational research with everyday classroom practice, our model enhances teachers' global competence, fosters interdisciplinary collaboration, and strengthens inclusive and inquiry-based teaching practices. Furthermore, this framework contributes to a broader systemic impact, as teachers not only refine their own methodologies but also support the transformation of educational paradigms beyond their institution.

This case study highlights the potential of a peer-driven, reflective, and research-informed professional development model to empower experienced educators and foster long-term educational innovation. Our findings suggest that investing in teacher agency, collaboration, and knowledge exchange can drive meaningful and sustainable changes in education at both local and systemic levels.

Keywords: Peer-learning, teacher leadership, educational transformation.

Future Teachers' Attitudes Toward the Inclusion of Students with Intellectual and Developmental Disabilities: An Analysis of an Inclusive Class in the UniDiversitat Programme

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When discussing initial teacher training, it is often concluded that future teachers should be capable of promoting inclusive values in their classrooms. However, there is frequently a gap between this ideal and reality, particularly when interacting with students with Intellectual and Developmental Disabilities (IDD) and/or Autism Spectrum Disorder (ASD) during their training. This study examines the behavior of childhood education students towards individuals with IDD or ASD in the so-called "inclusive classes" of the UniDiversitat program at Universitat Jaume I in Castellón. A qualitative methodology was employed, using systematic non-participant observation to analyze student interactions and how they engage their peers in activities. The study sample consists of 60 students from the Infant Teacher Training degree and 15 students from the UniDiversitat program. Preliminary results suggest that teacher training students sometimes exhibit ability-based microaggressions toward their peers with IDD and ASD, as they do not perceive them as equals and, moreover, lack the necessary knowledge to foster their inclusion. Therefore, a shift in perspective is needed among teacher training students, encouraging a genuinely inclusive mindset that acknowledges and values diverse abilities. Additionally, it is crucial to create situations where students with IDD and ASD collaborate as equals with their peers in the teacher training program. This is essential for fostering an inclusive educational culture, which goes beyond merely sharing the same physical space and focuses on developing mutual respect and collaboration. This study highlights the importance of establishing meaningful interactions between future teachers and young people with IDD and ASD, addressing both the challenges and opportunities of educational inclusion.

Keywords: inclusion, initial teacher education, attitudes.

Assessment Partnerships: Considering Student Assessment Met-befores

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This study examines the implementation of assessment partnerships in a foundational course for pre-service teachers (PSTs). Assessment as a partnership is also "a collaborative, reciprocal process through which participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision-making, implementation, investigation, or analysis" (Cook-Sather et al., 2014, pp. 6-7). We asked PSTs to reflect on their experiences with assessment as a partnership, investigating the challenges and opportunities assessment partnerships present. Using McGowen and Tall's (2010) concept of met-befores—mental structures resulting from prior experiences—the study explores how PSTs' past encounters with assessment influenced their assessment partnerships in the course. Met-befores can either be problematic--they impede sense-making--or supportive, whereby sense-making is enhanced.

Our thematic analysis of PSTs' responses included descriptions of three problematic met-befores: (i) systems of telling and compliance, (ii) self-assessments perceived as inconsequential, and (iii) grades determined through isolated events. These met-befores often conflicted with the collaborative and reciprocal nature of assessment partnerships. However, our findings suggest that fostering assessment partnerships with PSTs provokes critical reflection on traditional assessment norms and supports a transition from problematic to supportive met-befores. PSTs' experiences of assessment partnerships offer insights for teacher educators. By acknowledging and addressing influences of problematic met-before assessment experiences, educators can scaffold transformative learning opportunities, which become future supportive met-befores. This research contributes to discourse on reconceptualizing assessment in higher education, advocating for approaches where assessment, teaching, and learning seamlessly coalesce. Recommendations include emphasizing the importance of assessment partnerships with PSTs to reimagine their roles in assessment processes. Additionally, teacher educators might leverage problematic met-befores to design meaningful assessment experiences, which can become future supportive assessment met-befores. These recommendations hold the potential to influence PTSs' future teaching practices.

Keywords: assessment partnerships, met-befores, teacher education.

Predicting Academic Performance in Higher Education Using Machine Learning Models

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This study explores the application of machine learning models to predict student performance in higher education classes, aiming to identify students who may require additional academic support. Predicting student outcomes is essential for educators and institutions to develop proactive intervention strategies that enhance learning experiences. To ensure compliance with data privacy policies and institutional regulations, this research utilizes simulated data generated to reflect real-world academic patterns.

The study applies machine learning algorithms, including logistic regression, decision trees, and random forests, to analyze key academic indicators such as attendance, engagement with the learning management system (LMS), early assessment scores, and final grades. The performance of these models is evaluated using standard metrics such as mean absolute error, mean squared error and R-squared score. Additionally, feature importance analysis is conducted to determine the most influential factors contributing to student success.

Findings indicate that machine learning models can effectively predict academic performance, with attendance, early assessment scores, and LMS engagement emerging as critical predictors. These insights provide valuable guidance for educators and administrators in implementing data-driven strategies to support student learning. Using simulated data, this study demonstrates the potential of machine learning in enhancing educational outcomes.

Keywords: Machine learning, risk, performance.

Professional Conversations and the Principle of Symmetry: A Foundation for Teacher Professional Development

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Deep learning is transferable learning (Pellegrino & Hilton, 2012). If knowledge transfer is the defi ning feature of deep learning, then teacher professional development should be designed to emerge from the observation and analysis of the learning situations it aims to improve, ensuring that new insights can be eff ectively applied back to these same contexts. This approach requires immediacy to gather evidence and proximity to fellow teachers with whom to analyze it, fostering adaptive expertise (Timperley, 2023). The ability to apply knowledge fl exibly and adaptively to new situations is one of the most important characteristics of the human mind (Barnett & Ceci, 2002).

This presentation will explore the design and practice of professional conversations that begin with identifying a professional development focus (awareness) and are structured around observation, description, and interpretation of evidence. Through this process, teachers critically examine their beliefs, biases, and theories of action before drawing conclusions and implementing changes. The opportunity to engage in slow thinking (Kahneman, 2011) off ers new perspectives and can become a way to "think about teaching" with the humility of not having all the answers, while embracing the collective process of learning together. This approach leverages both the adaptive expertise within the teaching team and the available expert knowledge (Timperley, 2023).

At our school, professional conversations are a cornerstone of teacher professional development and serve as an example of the "symmetry principle": because teachers are not typically trained for deeper learning (…), schools should organize the adult learning in ways that were symmetrical to the ways in which they expected adults to teach students, Mehta, J. & Fine, S. (2019).

Keywords: Professional Conversations, Adaptive Expertise, Symmetry Principle.

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Podcasts to promote the professional vocation of future teachers

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One of the challenges in the training of future secondary education teachers is the promotion of professional vocation. In the Master's Degree in Secondary Teacher Training (MUFPS) at Rovira i Virgili University, a proposal has been presented to use the podcast as an innovative resource that uses digital tools to inspire and motivate students, that is to say, to future teachers. It is the subject of Vocational Guidance and Citizenship of MUFPS which has chosen to introduce the podcast in their teaching classes. It consists of a series of interviews with education professionals who explain their experiences, share their passion and comment from their point of view on the strengths and weaknesses of the education system, as well as the personal stories that have led each teacher and expert to choose this profession. In these conversations between the teacher who teaches the subject and the professionals interviewed, topics such as the challenges of the profession, satisfaction, teaching techniques, personal and professional development throughout the teaching career can be discussed, and finally some recommendations such as magazines, books, TV series, movies, any that are in some way related to education and that have motivated or helped them to advance in their profession are also discussed. At the same time, students conduct a final activity in which they also have to create a podcast, based on their proposal for teacher development to join the teaching career in secondary education. As an evaluation strategy, each student is expected to reflect on their own personal and professional growth, establishing goals and strategies to achieve them. In the podcast they will share their experiences, their challenges, their goals and how they plan to address them, all in a creative and communicative way. The results show that the use of podcasts in career guidance is a strength of the project, which promotes meaningful learning and the development of students' digital competence in a playful way. In addition, podcasts offer an accessible and engaging manner of transmitting knowledge, allowing students to feel connected to education professionals, creating a supportive community and a positive image of teaching. Thus, it can increase interest in the profession and help to consolidate a more conscious and reflective teaching vocation. In short, using podcasts to interview teachers is an effective way to spread the passion for teaching and inspire the next generation of teachers, allowing students to consolidate their learning and express it in innovative and reflective perspective.

Keywords: innovation, podcast, educational technology.

What is the ethical leadership of the university teacher in the training of the student teacher's ethos?

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This work is part of a larger research project carried out by Spanish researchers focused on the field of professional teaching ethics and initial teacher training. There are hardly any empirical studies in Spain that have addressed this issue. It aims to determine the state of the art in teacher training at the Faculty of Education, Economy and Technology of Ceuta of the University of Granada (Spain) and to assess whether ethical leadership competence can be considered a viable characteristic in the selection of the future teachers. This is an innovative line of work in the Spanish university context. The project is entitled *Ethical teacher leadership as a discriminating element in initial teacher training*. It has been funded by the Vice-rectorate for Research and Transfer of the University of Granada and the Autonomous City of Ceuta, in Spain (Reference CE-02-UGR24). One of the first objectives of the project focuses on the figure of the trainers of future teachers, trying to answer the question: are university teachers committed to the training of student teachers? To answer this objective, a sub-group of researchers in the project has focused on the analysis of the ethical teaching profile of academic internship tutors and their attitudes towards teaching. For this purpose, a quantitative methodology was chosen, using the *Teaching Professional Ethics Questionnaire* by Torquemada and Loredo (2021). As it is a standardised instrument, it meets the reliability and validity parameters required by these tests. The sample consists of all university teachers who teach Practicum II in Early Childhood Education and Primary Education Degrees. The sampling method used was incidental, taking advantage of easy accessibility. Regarding data analysis, descriptive analysis was performed first, followed by analysis of variance and K-means cluster analysis by means of IBM SPSS. The main results obtained are presented in this paper.

Keywords: teacher education, university teachers, ethical teacher leadership.

Professional self-concept of student teachers: its development through reflective writing

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This paper discusses new challenges for pre-service teacher education connected with the changing conception of the teaching profession in the Czech Republic. Special attention is paid to some innovative conception (implementation of socio-constructivist approaches, conception of clinically based practice and research based teacher education). The aim of this paper is to present the results of research study focused on exploring the influence of reflective writing on the professional development of student teachers, especially on the formation of their professional self-concept. The primary objective of the research was to investigate the professional self-concept of prospective teachers and to identify the factors that shape this professional self-concept. A qualitative research design, employing an inductive analysis of essays written by student teachers was utilized to address the research questions.

The analysis of the essays provided insights into the inner world of the students, shedding light on their perceptions of the teaching profession, the values they uphold, their opinions, attitudes, and professional beliefs they possess, as well as their personal motivations for pursuing teaching and the reasoning behind their career choices. Among the five categories, the categories of 'self and conceptions of teaching' and 'self and attitudes toward the profession' were the most prominent. The majority of statements revolved around the students' envisioned selves in the future and the type of teacher they aspire to be or wish to avoid becoming („Wanted/ Unwanted Selves").

The research data are discussed and interpreted within the framework of a comparative analysis in the context of both national and international research. The role of positive and negative emotions in shaping the professional self-concept is explored, along with its implications for the training of future teachers. Furthermore, attention is directed towards variations in reflective and self-reflective abilities among student teachers, as evidenced by the analysis of essays. Additionally, the potential of reflective writing methods for both diagnosing and cultivating the professional self-concept is examined.

Keywords: teacher education, professional self-concept, reflective writing.

From Day One to Certification: Designing an Intentional Pathway for Teacher Development

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This presentation explores a unique and innovative approach to teacher education across a four-year Bachelor of Education program in western Canada. Designed with practicums integrated each term, intensive and ongoing professional development, and multimodal community engagement, instructors have created an intentionally scaffolded sequence of courses, pedagogies, and experiences for year by year development of students into successful, certified educators.

A cohorted and collaborative model creates an exceptional multifaceted experience for learners. First-year students are actively involved in classrooms within the first month of school, providing an immediate hands-on pedagogical experience. Subsequent practicums each semester allow students to refine skills in specific areas such as literacy, assessment, and social-emotional learning, ultimately bridging to full-time teaching responsibilities. Professional semester instructors take a hands-on approach through weekly practicum supervision, lesson observation, and cohort seminars, all of which encourage student reflective practice and the development of professional skills. In addition, third- and fourth-year students participate in weekly professional learning communities, embedding community partner expertise with relevant pedagogies and research. Over the duration of the program, students create an evolving ePortfolio to track their growth and showcase learning competencies through the documentation of teacher artefacts.

A scaffolded approach to learning includes shared assignment schedules, cross-curricular planning, events, and assessments, weekly instructor meetings, common language, and coordinated goals over the four years. Focused and timely guest presentations and job preparation initiatives–such as a professionalism progression, mock interviews, and superintendent sessions–ensure students are well-equipped for their careers. Through purposefully placed, authentic, real-world, and AI-mindful assessments this program develops skilled, reflective, and lifelong learners in the field of education.

This presentation will offer participants a unique insight into the development of an effective and cohesive education program from inception to its current iteration. Presenters will share a model for program design with many facets applicable in varied contexts.

Keywords: teacher-education, program, innovative.

Educating in-service teachers to implement formative assessment strategies: an experience of action-research in secondary schools

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Formative assessment has a crucial pedagogical role in modern education, shifting the focus from just summative assessment towards a continuous learning support (Black & William, 2010; Boud, 2007; Hattie & Clarke, 2019). While research highlights its potential benefits, a need remains to understand its practical implementation and effectiveness across different educational contexts, particularly in secondary school level (Yorke, 2005).

This Action-Research study investigates the impact of formative assessment practices in secondary education across five schools in Liguria (Italy) during the second semester of the 2024/2025 academic year. The project involves 30 teachers from diverse educational settings, including vocational schools, lyceums, and technical institutions, exploring how formative assessment strategies can affect the students' learning outcomes.

The study employs a multilayer approach, combining in-service teacher training with collecting students' feedback. The professional development program focuses on equipping teachers with effective formative assessment techniques and strategies for implementing them in their daily teaching practice. Then, teachers experimented these techniques in their classes. In the end, students provided insights on perceptions of the assessment by filling out a closed-ended questionnaire. The questionnaire aimed to measure whether the formative assessment activities organized by the teachers implemented their self-efficacy, resilience, self-regulation and metacognitive sensitivity. The research aims to investigate the effectiveness of formative assessment practices in supporting students' learning by analyzing teacher feedback and student responses.

This project contributes to the professional growth of in-service teachers in using formative assessment strategies in secondary education, with particular attention to the Italian educational context. The findings will give us valuable information on how to implement the continuous professional development of in-service teachers and how to modify the teacher education programs for pre-service teachers.

Keywords: in-service teachers, formative assessment, secondary school.

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Social Support and Emotional Resilience in Hospital School Teachers: Navigating Challenges in a Unique Educational Setting

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Teaching is an emotionally intensive profession, requiring ongoing self-regulation and emotional labour. Teachers must continuously balance internal emotions while responding to learners, a process tied to their pedagogical identity and professional well-being (Bellocchi, 2019; Zhu & Zhu, 2018). However, emotionally charged responsibilities can contribute to stress and burnout (Maslach & Jackson, 1986), consequently efforts to sustain resilience, such as workplace social support, are critical. Drawing on Cutrona and Suhr's Social Support Framework (1992), this study explores the nature of collegial support among teachers in hospital schools.

Hospital school teachers operate in a highly complex environment, supporting a diverse learner group, experiencing illness and medical treatment. Beyond academic instruction, they provide individualised, flexible learning experiences tailored to learners' unique needs (Angstrom-Brannstrom et al., 2008). This study employed a narrative inquiry (NI) design (Wyman, 2003) to explore the experiences of teachers (n=16) and student teachers (n=4) across three hospital schools in the Republic of Ireland. Open interviews were thematically analysed, informed by a priori themes of the social support framework: social network, emotional, tangible, informational, and esteem.

Findings highlight the important role of collegial relationships in fostering a sense of community, shared experience, and mutual support. Formal meetings and informal interactions were key avenues for navigating challenges, though barriers such as mobile phone use and disengaged colleagues, particularly student teachers, were noted. Multidisciplinary teams contributed to support networks, albeit inconsistently. Emotional support emerged as central, with teachers openly sharing experiences with each other. This was in contrast to the self-regulatory strategies employed during lessons-masking emotions and compartmentalisation. A variety of tangible supports, such as workload alleviation, also played a role in stress reduction but was often constrained by staff shortages and inexperience.

These findings emphasise the vital role of workplace support systems in strengthening teacher resilience. They highlight the need for structured, sustainable support mechanisms within hospital school settings, as well as the importance of initial teacher education in preparing teachers for their broader roles, including fostering collegial support.

Keywords: Social Support, Hospital Schools, Teacher Resilience.

Enhancing Pre-service Teacher Experience through Collaborative Online International Learning (COIL): A Swedish-Canadian Student and Faculty Model

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Collaborative Online International Learning (COIL) is an emerging opportunity for teacher education programs to incorporate global perspectives and promote intercultural competencies for pre-service teachers. By leveraging online technology, COIL fosters collaborative learning between students and educators across international borders, providing students with the opportunity to engage with peers from distinct cultural contexts without traveling. In this presentation, we examine a collaborative COIL project between two teacher education programs, Kristianstad University in Sweden and Medicine Hat College in Canada, focusing on the ways this partnership enriches students' educational experiences and global awareness.

In this ongoing project, pre-service teachers from both Sweden and Canada collaborated on coursework, discussions, and projects, enhancing their intercultural competence. Through their engagement, students gained first-hand experience working across cultural and geographical boundaries and participating in discussions about cross-cultural educational structures, which significantly developed their skills of culturally responsive teaching, reflection, communication, and adaptability—essential traits for educators in today's interconnected world.

A significant component of this collaboration was a campus visit by Swedish faculty to their Canadian counterparts. This exchange allowed Swedish faculty to observe and interact with Canadian kindergarten through grade 12 and post-secondary classrooms and teaching practices firsthand. Engaging in meaningful professional dialogue about both Swedish and Canadian education systems not only strengthened relationships between institutions but also provided valuable insights into the impact of COIL on teaching and learning for faculty from both countries.

This presentation shares the Swedish-Canadian COIL partnership model as well as the positive influences on both students and faculty, including enriching the educational experience and fostering powerful cross-cultural dialogue. By offering pre-service teachers the opportunity to engage in international collaboration and learn from one another, this initiative strengthens the global dimension of teacher education, ensuring that our emerging educators are better equipped to understand, navigate and teach in culturally-rich classrooms worldwide.

Keywords: cross-cultural, collaboration, teacher-education.

Design of an educational intervention for the digital training of teachers through open educational practices

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The digital training of teachers has been an important topic in the scientific literature for the last two decades, particularly regarding the development of digital teaching competence (DTC). Educational institutions at different levels of education have developed training strategies and actions. After the Covid-19 pandemic, initiatives for the development of this digital training have emerged, as is the case in Spain, thanks to the European NextGeneration funds. Although some of these recent initiatives promote the sharing of Open Educational Resources (OER), they are still training courses with very traditional pedagogies that are inflexible, not open and not participatory.

However, open pedagogy and concepts such as open educational practices go beyond the creation and dissemination of OER and promote social practices of collaboration and sharing of objectives, resources, teaching-learning activities and assessment practices.

This study is part of a research project that aims to design, develop and evaluate a digital teacher training strategy based on open pedagogies using OER. Specifically, this presentation describes the main findings of the first phase of a design-based research (DBR), following a literature and context review, and the validation of the intervention with experts in educational technology and teacher training.

The results present a first prototype of the intervention, with elements according to three perspectives: (1) from the teachers' perspective, (2) from the students' perspective; and (3) from the educational institutions' perspective. These results will allow us to make further progress at the micro and macro levels in the development of more open and participatory training actions, with a greater impact on the improvement of DTC.

Keywords: digital competence, teacher education, open educational resources.

Teachers' Voices as a Key for Improving Initial Teacher Education

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Providing well-trained teachers is a crucial factor for enhancing educational quality. Nowadays, nearly half of Spanish teachers feel that the content and teaching practices learned during their initial teacher education are not applicable in school settings. This indicates a gap between theory and practice which must be bridged by re-thinking initial teacher education. Moreover, we consider that improving initial teacher education demands listening to teachers' voices. Nevertheless, little is known about their voices regarding an effective initial teacher education. This research aims to develop the teaching of informational literacy by drawing partially on teachers' voices. Informational literacy is defined as the capacity to search, treat, and communicate information. We interviewed twenty-eight teachers to explore their voices concerning the required knowledge for teaching informational literacy. A content analysis of these interviews was performed using the Technological Pedagogical Content Knowledge (TPACK) framework. Preliminary findings show that, according to teachers, student-teachers need to learn about: Pedagogical Knowledge, Technological Knowledge, Content Knowledge, Technological Pedagogical Knowledge, Pedagogical Content Knowledge, Technological Content Knowledge, Contextual Knowledge, and Professional Knowledge. Participants highlighted the teaching of Technological Knowledge and Technological Pedagogical Knowledge during initial teacher education. In addition, teachers were classified into three groups depending on the knowledge they emphasized: (1) Technological Knowledge, (2) Contextual Knowledge, and (3) Pedagogical and Content Knowledge. To conclude, our research provides valuable insights for designing learning opportunities within initial teacher education focused on developing student-teacher competence in teaching informational literacy. Results are relevant for teacher educators who want to innovate in initial teacher education. Specifically, by integrating theory and practice through the incorporation of teachers' voices.

Keywords: Informational Literacy, Initial Teacher Education, Teachers' Voices.

Exploring Student English Language Teachers' Agency through Action Research

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Action research (AR), critical inquiry, and teacher agency are deeply interwoven in initial teacher education (ITE), offering student teachers a framework for professional growth through systematic inquiry. AR fosters teacher agency by bridging theory and practice, enabling student teachers to critically examine pedagogical challenges, challenge assumptions, and refine their teaching strategies. Through this process, they develop autonomy and reflective decision-making skills.

This study examines how student teachers exercise agency through AR during their practicum (clinical practice spanning the second and third semesters). It draws on a qualitative analysis of AR projects conducted within an English Language Teacher Education (ELTE) master's programme at the University of Pardubice. Findings reveal that AR fosters high autonomy in selecting research topics, designing interventions, and critically engaging with professional development. Student teachers refine their pedagogical decision-making and assert ownership over their teaching practices. More significantly, AR serves as a mechanism for critical inquiry, empowering student teachers to question existing pedagogical norms, reflect on systemic challenges, and contribute to the evolution of educational practices.

Globally, AR is commonly integrated into the practicum stage of ITE, reinforcing reflective and analytical capacities while fostering professional agency. However, its impact varies based on institutional structures, which shape the degree of autonomy and support available to student teachers. At the University of Pardubice, AR promotes student autonomy, extended classroom engagement, and tutor support. However, challenges persist, including limited collaboration with the school community, a tendency toward general rather than subject-specific inquiries, and the perception of AR primarily as an assessment requirement rather than a formative developmental tool. To maximise its potential, deeper institutional support, stronger collaboration with mentors, and a shift toward AR as an iterative, formative process are necessary.

Keywords: teacher agency, action research, critical inquiry.

Attracting and Retaining Teachers in Australian Non-Metropolitan Schools Amid a National Workforce Shortage

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Workforce challenges in regional rural and remote (RRR) schools are not new. Given that the majority of teacher education courses are located in metropolitan areas and cater to metropolitan students, it is difficult for RRR schools to secure quality teachers.

This presentation addresses persistent workforce challenges in Victoria, Australia, amid a nation-wide teacher shortage. Various government measures and incentives such as salary loading, cost of living adjustments, and subsidized housing, have neglected to address the broader needs of graduate teachers like family and social connections, access to health services, and recreational opportunities.

Survey and focus group data were collected from three cohorts of Initial Teacher Education (ITE) students from a regional Australian university. These students discussed their careers aspirations with respect to place of future employment. The findings highlight the importance of school support through mentoring and a culture consistent with teachers' aspirations. A significant number of participants expressed a desire to teach in rural and regional schools. The findings of this research were used to forge a bold plan to attract teacher education candidates to an innovative regional 'Grow your own' teacher education pilot program. The presentation examines data collected from the preservice teachers in the pilot program that emphasises the fundamental ways that the pilot has supported and retained students and the possibilities it presents for addressing teacher supply in RRR areas.

The presentation concludes that investment in school leadership and mentoring, along with a commitment to employing and developing graduate teachers as future leaders, are key factors in attracting and retaining teachers in rural and regional areas. Furthermore, recruiting students from rural backgrounds into teacher education programs can enhance the supply of teachers for non-metropolitan areas. These elements are likely to be relevant for addressing teacher supply in regional areas across the globe.

Keywords: Teacher supply, Regional schools workforce, Teacher retention.

Supporting the teacher-researcher role through assessment-as-portrayal tasks: a sustainable use of metaphors

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The role of the teacher-researcher has gained prominence in educational research, emphasizing the integration of reflective and heuristic competencies into teaching practices. This dual role not only enhances teaching quality but also fosters a culture of inquiry and professional growth, positioning teachers as active agents in understanding and improving educational processes (Caena, 2014; Gutman & Genser, 2017).

To support pre-service teachers in reflecting on their professional identities, final-year students in a primary teacher education program were tasked with creating multimedia representations of themselves as teacher-researchers. This Assessment-as-Portrayal (AaP – Ajjawi et al., 2020) activity aligns with the sustainable assessment framework, as it is informed by reflective journals in which students documented their growth as pre-service teachers, addressing both their current and future learning needs (Boud, 2000). This study aimed to investigate the metaphors incorporated into the multimedia representations of the teacher-researcher role. Data were collected from 171 analytical sheets and analyzed using inductive content analysis (Elo & Kyngäs, 2008).

The findings reveal that students employed diverse metaphors to conceptualize the cognitive, relational, and contextual dimensions of the teacher-researcher role. Common metaphors, such as the architect, gardener, and explorer, represented key aspects of planning, care, and inquiry. The task enhanced students' heuristic and reflective skills, deepened their understanding of the complexity of teaching, and underscored the value of digital tools in professional communication.

This study highlights the effectiveness of AaP in fostering self-assessment, bridging theoretical knowledge with professional practice. Through metaphorical thinking, students developed a dynamic understanding of their professional identities. This heightened awareness could facilitate the transition from pre-service to in-service teaching, a phase often marked by a high attrition rate (Wang et al., 2008). Future research should investigate the potential of artificial intelligence to further support metaphorical thinking, opening new possibilities for sustainable assessment in teacher education.

Keywords: Teacher-researchers, Sustainable assessment, Assessment as Portrayal.

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Building the Education Museum of Catalonia: Bridging Heritage and Future

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Educational museums emerged in the late 19th century with pioneering institutions such as London's "Educational Museum" and France's Musée national de l'Éducation (MUNAÉ), now a European benchmark. In Spain, key milestones included the creation of the "Museo Pedagógico Nacional" in Madrid (1883) and the "Museu Pedagògic Experimental" in Barcelona (1905). The recovery of educational memory gained momentum with initiatives like the 2004 exhibition "A Century of School in Barcelona" and the 2005 launch of the Virtual University Museum of Pedagogy (UVic). Further efforts include the formation of the Network of Historical Schools of Barcelona (2011-12) and the establishment of CEIER, a centre for preserving rural school memory, in Verdú (2013). Recent initiatives include the project to recover the former Escola del Mar, destroyed during the Spanish Civil War. Barcelona's City Council has approved the reconstruction of this iconic educational space to house the central hub of the future Museum of Education of Catalonia. Catalonia currently lacks a dedicated education museum, despite the existence of various school and university based museums, and private institutions collections. To address this gap, the Catalan Education Museum Steering Group, coordinated by the Catalan Society of Pedagogy and the History of Education Catalan Society, has proposed a distributed network of historic educational sites, with its main site at Escola del Mar in Barcelona. This museum project, aims to preserve and promote the region's rich pedagogical heritage, evolving the concept of a museum into a participatory space for cultural, educational, teacher training and scientific engagement. The initiative has garnered broad institutional and public support through a Manifesto and will host its foundational conference in October 2025. With collective effort, the Museum of Education of Catalonia will serve as a dynamic repository of educational heritage and a platform for shaping the future of education.

Keywords: Teacher training, Education Museum, History of Education.

Tipping point time: Teacher educators leading collaborative action

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Introduction: Globally, education is in crisis. This is not meant as a statement of doom and gloom – rather, it is a rallying call to use this critical tipping point as the opportunity to create a cut or break. The focus in this paper is on the need for educational innovation and transformation.

Methodology: Through a process of theoretical and literary synthesis we explore the signs that are there globally, that the tipping point to create the break or cut needed to make that happen, is upon us. This break is needed at all levels; in teacher education and in schools.

Results: We as teacher educators can be a powerful force to help make this break and create the energy for change. However the challenges faced in education are increasing significantly such that an original innovation is imperative. Osberg (2010) states that "At these points the system is forced to do something unprecedented (in the history of the system). This introduces a discontinuity; a break or 'cut' with the continuity of the past" (p.v). We argue the current predominant 19th century industrial model of schooling is inappropriate and irrelevant for schooling and teacher education in the current global context.

Discussion: Currently educational practices and polices divide learning into discrete and frequently unconnected disciplines and concepts. We introduce the 7i approach (Ling and Livingston, 2024) as a frame within, through and around which to create the momentum to transform teacher education and schooling in a global context. The 7 elements of the 7i approach are characterised as "innovating, interrogating, interacting, involving, improvising, implementing, and iterating". We use these to confront and propose innovative ways to transform teacher education and schooling through public and practitioner engagement, and to challenge the systemic stagnation in educational policymaking.

Keywords: education in global crisis, systemic stagnation, public and practitioner engagement.

Fostering STEM capital through interprofessional Lesson Study: A pilot project

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While traditionally, Lesson Study (LS) is a collaborative professional development process utilised in educational settings, interprofessional LS (ILS) represents a form of LS involving non-educators and educators. This paper presents critical reflections on a novel ILS approach to facilitate collaborative learning between primary teachers and university-based materials scientists. The purpose of scientists' involvement was to build teachers' knowledge of novel science research, with the aim of supporting teachers to facilitate high quality STEM learning experiences for students. The project sought to uncover affordances of an ILS approach to enhance students' STEM capital. STEM capital encompasses all STEM related knowledge, social contacts, attitudes, skills and experiences a person has and how those resources influence their STEM engagement. Unbalanced distribution of STEM capital resources exacerbates the issue of unequal participation in STEM among certain groups including women and those experiencing educational disadvantage. Enhancing STEM capital resources for such groups can improve their STEM dispositions and participation. Teachers play an important role in fostering students' STEM capital. The project involved two teachers in an all-girls primary school in an area of significant socioeconomic disadvantage in Dublin, Ireland, comprising one ILS cycle facilitated by a Knowledgeable Other based in the materials science centre. Qualitative data generated through reflective diaries, ILS materials and student work samples indicated that the opportunity to access STEM expertise was welcomed by the teachers. Teachers noted that the prestige of having university-based scientists collaborating in a meaningful way with their school community fostered a sense of pride amongst the students in the participating classes and the wider local community. Teachers felt this further supported STEM capital by 'getting STEM into the conversation' beyond the school walls. The project findings have implications for others interested in using interprofessional LS as a mechanism to support interdisciplinary collaboration for educational and societal impact.

Keywords: STEM Education, Lesson Study, Teacher Professional Learning.

Inclusive Digital Storytelling: Tools for Self-Recognition in Italian Primary Education

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In contemporary education, fostering employability (Cavenago, Martini, 2012; Fugate, Kinicki, Ashforth, 2004; Hillage, Pollard, 1998; McQuaid, Lindsay, 2013, Grimaldi, Porcelli, Rossi, 2014; Grimaldi, Bosca, Porcelli, Rossi, 2015) has become a priority to ensure a meaningful future for all individuals. The Life Designing paradigm (Savickas, 2014) offers an innovative approach by leveraging adaptability and autobiographical narrative to support the development of resilient identities and promote quality life planning.

In the Italian educational context, increasing emphasis is placed on inclusive practices and career guidance, particularly in fostering self-awareness and future planning from early education (Capo, 2021). Within this framework, narrative emerges as a pivotal educational tool, promoting self-awareness and self-realization (Bruner, 1990; McAdams, 2001). By assigning meaning to personal experiences, narrative enables critical reflection and facilitates the identification of resources essential for addressing future challenges.

This study proposes the development of an inclusive, responsive app for digital storytelling (Jonassen, Howland, Marra, 2007), designed according to Universal Design for Learning (UDL; CAST, 2011; Sgambelluri, 2020). The app guides students, including those with disabilities, in constructing a "competence tree" (Wiele, P. V., Ribière, V., 2014), a metaphorical framework comprising roots (origins), trunk (personal essence), branches (learning opportunities), and leaves and fruits (achievements and aspirations). Its intuitive interface integrates assistive technologies, such as speech synthesis, to ensure accessibility.

By reviewing the literature on narrative, employability, and inclusive methodologies, this contribution explores the potential of digital storytelling as an educational tool in primary schools. The proposed app represents a significant step toward creating inclusive and equitable learning environments, addressing both Italian and global educational priorities.

Keywords: Digital storytelling, Self-awareness, Inclusive education.

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Establishing a team of school-based mentors - strengthening mentoring in schools: A collaborative project between teacher education and schools

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This paper explores and discusses the process of establishing a team of school-based mentors in schools. Most student teachers in practicum are taken care of and mentored by individual school-based mentors (Heggen & Thorsen, 2015; Munthe & Ohnstad, 2008). Student teachers also experience the quality in practicum as varied (Andreasen & Høigaard, 2017). At the same time, studies (eg. Hansen, 2020; Ulvik et.al., 2018) show a need for schools to build a community where a team of school-based mentors can share knowledge as well as develop competence in mentoring. Mentoring can contribute to student teachers' professional development, as well as assisting in the transition into the teaching profession (Wiese et al., 2024). Pedagogic action research (Hiim, 2010; McNiff, 2014) is used as the ownership, knowledge and experience of school-based mentors are essential (Carr & Kemmis, 1986). Perspectives on professional learning communities (Aas & Vennebo, 2021; Stoll et al., 2006) and a systemic understanding of mentoring (Ulleberg & Jenssen, 2025) are drawn from.

Preliminary findings show four areas central in the process of establishing a team of school-based mentors. First, trust and relationships becoming a safe (third) space for school-based-and campus-based mentors to explore capacities in mentoring (Hargreaves & Fullan, 2014). Second, the emotional dimension with affective commitment meeting student teachers as well as overcoming own boundaries (Sandvik et al 2019). Third, the intertwined processes between school-based mentors individually- and collectively developing mentoring (Hansen, 2020; Ulvik et.al., 2018). Four, the crucial role of the school leader (Stoll et al 2006). The relational aspect becomes filtered through all areas of mentoring recognized by one school-based mentor discussing meeting student teachers in practicum as an endless process of development (Notes 24.10.23).

Keywords: Teacher education, school-based mentors, mentoring.

Re-imagining teacher role, identity and agency: compulsory teaching practice in education settings which challenge preconceptions

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Ideally, schools should constitute spaces where all types of learning occur, academic, social, emotional; where learners establish supportive relationships, belonginess and purpose or whole child development (Darling-Hammond et al., 2020). In order to meet the complex needs and inclusion of learners from various cultural and social backgrounds, we maintain that teacher agency should underpin initial teacher education, supporting the development of teachers with critical dispositions, who foreground inclusion and appreciate various perspectives and world views. Utilising Kaplan et al. (2015) Dynamic Systems Model of Role Identity, we explore if student teachers who engage with heterogenous learners and multidisciplinary teams in hospital schools, are simultaneously challenged to question teacher role and identity, while focusing on whole child development. We explore what we can learn from student teachers' experiences and what changes are needed to initial teacher education programmes, by examining if the hospital school environment enables agentic teachers, challenging them to question values and how to foreground the child's needs amid existing policies, structures and practices while developing trust and connections among staff and families.

Utilising narrative identity inquiry methodology (Marschall, 2022), findings from four in-depth interviews with student teachers following a placement in hospital schools are discussed. Using thematic analysis, similarities and differences in experiences of agency relating to social relations, trust, and values are identified and organised under four themes; New skill sets; Team membership; Socioemotional awareness; Teacher role/identity.

In order to foreground teacher agency within initial teacher education programmes, the findings indicate the for a stronger emphasis on addressing skills of negotiator and team member; ensuring 'normalcy' in social-emotional development of learners; linking whole child development to the inter-related nature of cognitive, physical and socio-emotional development; the importance of ensuring compulsory teaching practice in settings which challenge pre-conceived goals, values, understandings, beliefs and expectations.

Keywords: Agency, Identity, Collaboration.

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Availability and perceived technological competence as mediators of attitude and performance of grade four students in science and mathematics in the United Arab Emirates

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Access to technology has been found to be vital to be instrumental in contemporary teaching and learning. It is unsurprising that many countries are incorporating technology in teaching to enhance the learning of students. The importance of technology in learning has coincided with current effort of governments towards promoting students' participation and performance in especially science and mathematics. However, contemporary literature in non-western contexts such as the United Arab Emirates (UAE) has focused mainly on teachers and students' attitudes towards technology usage. To the best of our knowledge, the synergy between technology, attitudes towards subjects such as science and mathematics as well as students' performance is unresearched. There is limited literature on availability and perceived competence in technology usage and its influence on attitudes and performance in mathematics and science among grade four students. The goal of the current study was to explore the mediation effect of technological availability and perceived competence on the relationship between attitude and performance of students in both science and technology. The study drew on Trends in International Mathematics and Science Study data collected from grade four students during the 2023 cycle. In the UAE, a total of 85,409 grade four students participated in science and mathematics test across the country. Following this, the grade four students completed the following sub-scales: availability of technology at home, competence in technology usage, attitude towards science, attitude towards mathematics and performance in both mathematics and science. The study has the potential to generate useful information which could have implication for effort towards promoting better students' performance in science and mathematics in the UAE and similar contexts.

Keywords: Grade 4, Technology, STEM, Performance, attitudes.

Creativity and technology in Physical Education: Preparing pre-service teachers through maker culture

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Maker education is considered a hands-on learning approach where learners and educators design, build, and modify objects using traditional techniques or digital tools to create useful products (Veldhius et al., 2021). Its integration into schools through problem solving or learning through trial and error can bring benefits to learners, to increase work collaboratively, interest in subjects and self-efficacy (Chu et al., 2017; Jia et al., 2021; Martin et al., 2020). Despite the importance of teacher training, there is a lack of training programs in this area (Stevenson et al., 2019).

A quasi-experimental design with a quantitative research is adopted. The study employs a pretest and posttest, with a sample of 30 pre-service teachers. In particular, they are students of the double degree in Primary Education and Early Childhood Education at the URV in their 5th year. Pre-service teachers attended a training in maker education focused on physical education area, for a total of 8 hours distributed into 4 sessions, given between March and April 2025. The Maker Competency Assessment for Educators (MCAE) questionnaire was administered and data was collected before and after the intervention.

The results are expected to reflect an increase in the levels of maker competence of pre-service teachers. In short, we remain committed to this type of training that offers teacher training in the field of maker education; we also emphasise the importance of continuing to promote the integration of TDs in the field of physical education.

Keywords: Physical Education, maker education, pre-service teachers.

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Reinventing Global Citizenship: Reassuring Feelings of Belonging by Breaking Boundaries

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While global solidarity and collective action are critical for sustainable development, the evolution of a global society has paradoxically triggered a resurgence of tribalism and isolationism.

These phenomena challenge efforts to foster a sense of shared global citizenship, threatening the vision of a more united and equitable future. This presentation emphasizes the need for teacher education programs that reconcile the preservation of local identity with the cultivation of global humanistic values. A successful framework for training future educators in a global context must provide a strong sense of the values of local culture as a foundation for identity while fostering a resilient commitment to building a global common ground.

Key to achieving this balance is the development of innovative strategies that empower local traditions and broaden identity concepts while integrating notions of a humanistic, globally networked culture into the educational framework. In today's uncertain climate, it is essential to break through boundaries that still divide formal education from informal and non-formal education, between theory and practice, between research and experience. This approach equips teacher educators to open new horizons for their students. Rather than diluting the local, global citizenship should be envisioned as an inclusive umbrella, under which diverse cultural heritages contribute to mutual understanding and collective growth.

Recognized examples of this approach include projects like "Grandma's Games" (Marina Vasileva, 2017), which adapts traditional Macedonian children's games for digital platforms, ensuring their continuity in a globalized world. Similarly, the prizewinning "Casal del Conflent" (2011–present), a Catalan cultural association in France, demonstrates how open, non-formal education can empower local cultures through outreach actions like plurilingual cinema, and networked activities such as transnational research and international media production.

Keywords: Identity, Global citizenship, Bridging.

Quantitative Landscape for Research: In between Theory and Practice

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Introducing data from the International Association for the Evaluation of Educational Achievement's (IEA) large-scale assessments as a foundation to conduct research on teaching, evaluating instruction, supporting educational practice. This contribution will also highlight the benefits of using IEA's open-access resources.

IEA has measured students' achievement in mathematics and science (TIMSS), reading (PIRLS), civic and citizenship education (ICCS), and computer skills and literacy (ICILS). These assessments are grade-specific and curriculum-based, examining what students are expected to learn (intended curriculum), what is taught in schools (implemented curriculum), and student outcomes (achieved curriculum). With a strong empirical basis, IEA studies rely on cross-sectional and longitudinal non-experimental designs, with data collection through sample survey methods. Achievement is measured by administering objective tests to a sample of students who have been selected as representative of national populations. Assessment questions are pre-tested to ensure high-quality comparative standards.

IEA studies collect background information from school principals, teachers, students, and parents about the national education system contexts and factors that affect learning, including school resources, student attitudes, instructional practices, and support at home.

These studies are designed by educators, for educators to answer questions such as: What do students know and what can they do? Is student achievement improving over time? What practices and policies are associated with student achievement? By exploring school, home, and learning-related factors, they provide insight into equity in education, gender matters, parental engagement and strategies, influence of student attitudes and motivation and other contextual factors linked to educational achievement. Longitudinal datasets reveal the evolution of educational systems and their contexts over time.

IEA studies are a valuable source for reviewing theory and practice and a solid evidence base for educational researchers and teacher educators. We will document examples preparing the ground for discussion on opportunities and challenges for using IEA's open-access resources.

Keywords: Large-scale assessment data, almanacs, IEA study frameworks.

Experiential Teaching Techniques to Fight Fake News

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In an era where social networks are inundated with fake news and AI-generated deep fakes, it is crucial to equip educators with innovative strategies to address this issue. Traditional methods relying solely on factual corrections often fall short, as fake news predominantly appeals to emotions and instincts rather than reason. To counter this, experiential teaching techniques, which mirror the engagement while stepping back from the emotional intensity of fake news, offer a more effective approach.

This presentation explores the use of emotional intelligence, cognitive distancing, and collaborative methodologies to empower teachers in combating misinformation. Traditional techniques such as webquests, which foster critical thinking and inquiry, and card sorting activities, which enhance categorization and analytical skills, can be supplemented with AI-based activities to provide educators with practical tools to engage learners in discerning the authenticity of information. We can defuse the intensity of misinformation when we provide cognitive distance, moving issues from what Marshall McLuhan described as a hot environment to a cold one.

This approach is grounded in practical application and draws on insights from a workshop conducted during a symposium for students and educators at the University of Strasbourg in 2024. This session demonstrated the transformative potential of these techniques, some of which are derived from the profession of user experience design (UX), in raising awareness and enhancing critical media literacy among participants.

The presentation offers attendees practical activities they can integrate into teacher training programs. By fostering a blend of personal engagement and analytical rigor, these practices aim to equip educators with the skills necessary to combat the pervasive challenge of fake news in the digital age.

Keywords: Fake news, Experiential learning, Critical thinking.

Teaching Differently: A Reflection on Facilitating Learning in Initial Teacher Education through Personal Stories

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Theoretical framework: One of the challenges in teacher preparation is encouraging and equipping student teachers to think critically and teach creatively and differently when out on school placements and as Newly Qualified Teachers (NQT). Creativity enhances learning by making the process more meaningful (Rinkevich 2011). One of the ways of preparing student teachers to teach creatively is by mirroring same in the processes of teacher preparation, and a valuable resource for teaching creatively in initial teacher education is the student teachers' own lived and living experiences of education- their personal realities (Greene 1978).

Methods: This paper is based on a self-reflective study. It presents the author's reflection on the outcome of seven weeklong reflective exercises based on student teachers' personal stories designed to facilitating the development of critical reflective skills in pre-service teachers and challenge them to teach creatively.

Findings and conclusions: Creative pedagogical practices in teacher preparation can encourage pre-service teachers and NQTs to adopt creative teaching methods in their own teaching. n-106 pre-service teachers responded to the post-exercise survey, 98% said the exercises helped improved their critical reflective skills, while 93% said they are likely and most likely to try out creative approaches to facilitate learning when out on school placement and as NQTs as a result of their participation in the reflective exercises.

Keywords: Creativity, Teacher, Education.

Changing Times, Changing Minds

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Whether interacting with people across languages, understanding the networked communication of plants, or recognizing cultural behaviors in animals, AI is not only transforming human endeavors but also deepening our awareness of the intricate systems that sustain life on Earth. The rapid development of AI tools has prompted a reevaluation of our traditional concepts of intelligence, while simultaneously offering groundbreaking insights into the interconnectedness of the natural world.

This presentation proposes strategies for a shift in teaching paradigms, using AI for deep discovery and emphasizing the importance of creating collective consensus to understand new synergies between nature and technology. We need ethical AI not just to enhance a global digital culture, but also to promote consciousness of technology and natural systems as complementary forces, where human activities are inextricably linked to the broader ecological web. These changes have the power to move our perception from linear progressions to a more matrixed view of space, time, information and consciousness. A dynamic teaching and learning interaction that adapts to this complex reality has become essential for fostering educators capable of nurturing students' understanding of interconnectedness, sustainability, and civilization. This is the common ground for developing Global Culture.

The authors offer a model for the holistic integration of AI learning in classrooms, schools and educational organizations. It provides a foundation to sensitize future teachers by merging AI-driven insights with sustainability awareness. Educators can contextualize these concepts in diverse learning environments, with adaptable, hands-on training activities, such as those that are being implemented under the umbrella of APLICA-Solucions (a Catalan educational project from the Catalan Society of Pedagogy), in training courses for educators (2024), for schools (Isabel de Villena School, Barcelona, 2024-2025), and at university level (University of the Balearic Islands, 2025).

Keywords: Sustainability, Organizational planning, Artificial intelligence.

Collaborative Innovation in Teacher Education: Co-Teaching and Pedagogical Practice in a Bachelor of Education Program

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Innovative collaborative practice is a significant driver of effective teacher education programs. An education team in a western Canadian Bachelor of Education program has achieved this through research and subsequent development of a pedagogy-focused course, co-taught by five faculty members. Teaching and modelling instructional foundations and high-impact practices, enhanced by the co-teaching aspect, is an innovative model to prepare pre-service teachers for practical and collaborative applications in today's diverse classrooms.

Action research on pedagogically-focused needs and priorities from the local educational community, including extensive qualitative responses, were thematically analyzed. Through collaboration as a team, five topics for this course were then purposefully selected, sequenced, and developed. Faculty each adopted one pedagogical topic, allowing the opportunity to deeply consider content, delivery, and outcomes to fully immerse students in meaningful development of their pedagogical knowledge and skills. The cooperation amongst faculty to co-teach throughout this course models an innovative approach to course delivery and authentic teaching realities.

Pre-service teacher achievement in this course is assessed through five unique and intentionally designed projects that targeted key learning outcomes in each pedagogy topic. Also integrated into the course is the focus on practical scenarios in each section, inclusion of local school experts, and pre-service teacher conversations with mentors and administrators. The course culminates in an authentic pedagogical experience.

In this session, presenters will be sharing the results of this action research project, including collaborative research processes, the set up of a co-taught course, selection of pedagogical content and sequencing, assessments, iterative course-based reflection, and student outcomes. Additionally, the challenges and opportunities of developing and co-teaching a pivotal Bachelor of Education course will be shared as lessons learned. Attendees will leave this session with ideas for how to implement this innovative approach, with specific details and planning considerations for both pedagogical topics and co-teaching considerations.

Keywords: pedagogy, collaboration, co-teach.

On the influence of Erasmus+ KA1 projects for teacher professional development in adult education: Assessing the shifts in teaching and learning

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This presentation outlines the professional development and consequential improvements in classroom delivery of adult education teachers who have participated in Erasmus+ KA1 school education projects. The underlying framework is based on three interconnected theoretical areas forming a dynamic triangular relationship with Europe and teachers, on one hand, school context and culture, on the other, and finally teacher biography and narrative. Teacher continuing professional development, and all that it entails is the necessary backdrop to the framework (Martins, et al., 2024). The European Commission's prioritisation of transnational projects in education has aimed at improving educational quality (European Commission/ EACEA/Eurydice, 2021) while fostering communication networks where teachers and schools can share best practices and experiences.

Research was conducted in two phases. First, a delegate from the National Erasmus+ Agency was interviewed, followed by a focus group with teachers and headteachers who had participated in Erasmus+ mobilities for teacher professional development purposes, followed by individual interviews with teachers and headteachers. This provided a grounding notion of how these projects were perceived by teaching professionals. The second phase applied these notions to the specific world of adult education. For this, adult learners and their teachers were interviewed to gain a clear understanding of what impact skills acquired by teachers through Erasmus+ had on classroom delivery.

On all fronts, change became the operative word, not always easily quantifiable, nor describable, but teachers, headteachers and adult learners agreed that these initiatives produced a significant shift in skills developed in the classroom and even the perception of European values and cross-national citizenship. Teachers stated they had developed an awareness of their own practices which helped to create pathways for future professional development, whereas learners understood that new skills were being developed in their education and training, creating a more positive outcome for their professional prospects.

Through the focus group and the interviews, teachers felt challenged by the notion of becoming European teachers (Schratz, 2014). Whereas some seemed to adhere to the notion on a professional domain, others felt that the citizenship sphere that the concept entails was

still distant though not entirely foreign, nevertheless pushing them into a necessary space of reflection on their professionalism (Hirsch, 1993; Korthagen, 2005). On the learners' part, the flexibility and opportunity for openness (Baptista, et al., 2008) was a crucial and welcome alteration in teaching practices and classroom dynamics, one which they hope to continue and further develop.

Keywords: Teacher Professional Development, Adult Education, Erasmus+.

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Future Classrooms: Creation of extended reality (XR) objects for university teacher training

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Various emerging technologies are gaining strong momentum due to several factors, such as the growing significance of Web 2.0, the decreasing cost of equipment, and the widespread adoption of mobile devices, among others. The so-called "Extended Reality" (XR) is experiencing significant penetration in educational institutions and universities as a tool that enhances innovative pedagogy. This communication presents the design and creation process of the XR object called "Future Classrooms," which is part of the project "*The Metaverse: Extended Reality (virtual and augmented) in Higher Education: design, production, evaluation, and training of extended reality programs for university teaching (MEREVIA)*" (https://merevia.es/). This project focused on creating immersive learning objects for training using: Krpano, Adobe Photoshop, Adobe Premiere Pro, Insta360 Studio, and Canva. These tools were employed for various aspects, ranging from assembling panoramic images and 360-degree videos to editing 360º videos, creating interactive icons, and constructing holograms.

The didactic design considered several aspects derived from Mayer's (2002) cognitive theory of multimedia learning. The learning object developed for this research incorporated the following number of resources: audio recordings: 12; videos with written text: 4; flat videos: 3 (2 of them featuring people speaking); holograms: 2 (1 introductory + 1 with content); static image + audio: 2.

The resource is available at: https://recursosvirtuales.es/miravete/aulasdelfuturo/.

Keywords: Extended Reality, future classrooms, learning objects.

Beyond Ambiguity: A Four-Quadrant Model for Teacher Empowerment Approaches

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Teacher empowerment is pivotal when addressing many challenges in contemporary education scenes. However, current discourses remain ambiguous about what it means to empower teachers and the teaching profession, and it is often framed in a dichotomy between intrinsic professional growth and extrinsic compliance. This polarisation suggests the lack of a comprehensive framework for reconciling the dicotomy in the approaches to teacher empowerment.

This research introduces the Four-Quadrant Model, which synthesises Erich Fromm's (1976) conceptualisation of "having" and "being" with Judith Sachs's (2001) insights on professional identity, to provide a framework for understanding empowerment. The model helps map strategies across (1) individual and collective dimensions and (2) intrinsic and extrinsic orientations when empowering teachers, thereby offering a balanced perspective on teacher empowerment policies.

The Four-Quadrant Model aims to categorise empowerment strategies. It helps distinguish approaches prioritising individual autonomy and collaboration and those oriented toward intrinsic growth versus extrinsic accountability. In so doing, the model proposes a balanced approach to teacher empowerment by critiquing the existing ambiguities in current discourses.

Furthermore, this research applies the model to a systematic analysis of peer-reviewed papers published in teacher education journals in Japan. This application demonstrates the model's potential to illuminate patterns and tensions in existing empowerment strategies while also validating the model's relevance when analysing teacher education discourses.

While primarily theoretical, the Four-Quadrant Model offers a foundation for future empirical investigations into the practical implications of empowerment strategies. By offering a structured and adaptable lens for analysing teacher empowerment, this research provides insights for policymakers and educators to go beyond current ambiguity around teacher empowerment and its discourses. These insights aim to foster sustainable strategies that enhance the teaching profession's appeal and promote meaningful, context-sensitive professional growth.

Keywords: Teacher Empowerment, Teacher Education Discourses, Teacher Policy Discourses.

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Democracy and Citizenship in literary texts in the EFL classroom

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The current Norwegian National Curriculum, (LK20) has introduced three interdisciplinary topics to foster a holistic didactic approach to teaching and learning. The topics are relevant on individual and societal level, both locally and globally. The interdisciplinary topic democracy and citizenship will be the basis for this study. According to the English Subject Curriculum tolerance, curiosity and engagement are values to be promoted in the topic of democracy and citizenship. Learners shall train their ability to think critically, learn to deal with conflicts of opinion and respect disagreement. In addition, one of the competence aims in the curriculum concerns reading, interpreting and reflecting on fictional texts in English to strengthen students' competence in the topic.

The present study aims to examine how teachers in lower secondary school interpret and understand the topic of democracy and citizenship in literary texts.

The respondents are in-service teachers of English who have an assignment related to a children's literature project. In the project, the teachers choose a literary text in line with the topic of democracy and citizenship. Next, the project is planned and implemented in the classroom. After sharing the project with colleagues, a report is written based on the process and the experiences. Finally, the project is part of the final assessment (semester paper) in the course, which should give engagement with the task.

The research project is in its starting phase now, but consent forms and surveys have been created and distributed. The data collection will take place in late spring, and the analysis will follow thereafter. The data will be coded and analysed based on a conventional content analysis (Hsieh & Shannon, 2005).

It will be interesting to see if there are differences in how teachers interpret the interdisciplinary topic of democracy and citizenship in literary texts.

Keywords: interdisciplinarity, democracy and citizenship, literary texts.

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Posters

An exploration of early career teacher educators' resistance to a researcher-oriented identity

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This ongoing research explores the career decisions of a cohort of third level teacher educators in one Irish university through the lens of Marcia's (1980) Identity Status Theory. The participant teacher educators qualified as teachers before lecturing on initial teacher education programmes in third level. Teacher educator identities have been a consistent focus of research attention in the last 20 years consequent to their influence on how teacher educators perceive themselves as professionals and the consequent impact on their practice, including their approach to research. A research-oriented teacher educator identity is deemed a critical sub-identity to support teacher educators' professional development as academics. Problematically, studies have demonstrated that for the first five years in higher education teacher educators are unlikely to perceive that research is a core part of their role; they do not evidence a researcher sub-identity. Uniquely, this research explores this identity issue using Marcia's (1980) psychosocial identity theory to analyse teacher educators' career choice explanations. Marcia argues that the pursuit of identity can be understood by the degree to which an individual has both explored and committed to an identity; each identity status reflects a high or low emphasis on 'commitment' and 'exploration'. This research follows on from a study which explored the identity status of a cohort of pre-service teachers in Ireland in 2019 which evidenced that most appeared to have a high commitment to teaching but low exploration of other careers before committing to teaching. This research seeks to investigate the participants' career exploration before their move into a second career as teacher educator. This may offer potential explanations for why early career teacher educators do not embrace a researcher identity and suggest possible opportunities to support early career teacher educators to embrace their researcher identity more quickly supporting their professional development as academics.

Keywords: Teacher Educators, Identity, Researcher.

The contribution of realizing community building circles with students and teachers to the school's coexistence

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This research aims to highlight the role that talking circles can play in the creation of community and the promotion of coexistence in a school, with the objective of learning to live together. Talking circles are framed within restorative practices, which understand that the building of social relationships among the community is the pillar to be able to repair the damage when there has been a conflict. That is, building community and relationships is the tear 1 in the scale of restorative practices, is the basis for enabling students to resolve the conflict when it occurs. In consequence, the intention is to focus on the creation of community offered by the preventive and proventive restorative practice of talking circles, also known as community-building circles.

The study is contextualised in the Angeleta Ferrer High School. The school's educational project defines and organises its vision, based on three pillars: project-based learning, personalised learning and community learning. The latter describes the culture of coexistence that the school wants to have based on restorative practices, respect and non-violent communication. Therefore, two community-building circles are held weekly per class-group. The teachers themselves also hold a circle of one and a half hours per week, following the principle of symmetry between the practices of teachers and pupils.

The methodology for investigating the contribution of the circles consists of eight observations of pupil circles and the facilitation of circles with teachers on coexistence. For the analysis, the institute's understanding of coexistence is taken into consideration and observed as it develops in the circles, as well as being discussed in the teacher circles.

The conclusions indicate that the circles' methodology offers the conditions for providing mutual and help support, working together and promoting emotional well-being. Holding weekly circles contributes to fostering provention, mutual understanding and conflict resolution.

Keywords: talking circles, restorative practice, coexistence.

School-friendly parents or family-friendly schools? Characteristics of Parental Involvement in Hungarian Vocational Schools

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Parental involvement, including parent-school contact and home-based activities, is a strong predictor of student achievement, even when controlling for other factors (Jeynes, 2005, 2007; Danişman, 2017). While international research highlights the importance of parent-school relationships, most studies focus on kindergarten and primary education. Research on parental involvement in secondary education, especially in vocational secondary schools (which provide a high school diploma) and vocational schools (which do not provide a high school diploma), remains limited, despite its importance for students' academic and career development. In Hungary, there is a paucity of data on teacher-parent contact and parental involvement in vocational education. Previous studies suggest that involvement is influenced by student characteristics (e.g. gender, academic performance) and family background (e.g. socio-economic status, family structure). Institutional differences in parent-school interaction further complicate the issue and pose challenges for teachers and policy-makers. Given the differences between school types, it is essential to examine these differences. Based on qualitative research, including school case studies and teacher interviews, this study hypothesises that school policies can support parental involvement at home and in learning. The research explores how parental involvement develops in schools with high dropout rates, low progression to further education and disadvantaged student backgrounds. We assume that barriers are primarily family-related rather than school-related. Using a large Hungarian database, we focus on vocational secondary schools and vocational schools. In 2022, a survey was conducted with parents of students in different school sectors (N=1000), with a focus on vocational education. The findings identify key challenges and resources within parent groups and outline policy recommendations to enhance parental engagement. The findings highlight the need for an increased focus on parental involvement in vocational education to support student success.

Keywords: parent-teacher collaboration, parental involvement, parent involvement in secondary school, vocational school.

Factors Affecting Successful Teamwork among School Staff: Evidence from a Survey of School Support Professionals

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Numerous studies emphasize the critical role of teachers and parents in fostering successful learning outcomes. However, the significance of collaboration between teachers and school support staff in education, both within and beyond the classroom, remains underexplored, despite the vital role of school support professionals (SSPs) in daily school life (Masdeu Navarro 2015; OECD 2019). It remains an open question whether the internal or external institutional model of school support is more effective. Our study aims to examine how school support professionals can enhance teachers' efficiency and identify the factors that influence successful teamwork. Our research focuses on three types of SSPs who address the needs of the entire student body. The target group for our quota-based study includes teaching assistants, school social workers, and school psychologists working in ISCED 2-3 institutions in Hungary (N=416). Our research question examines how support staff can reduce teachers' workload and what factors influence the collaboration between teachers and support staff. We hypothesize that the type of SSPs' employment (whether they follow an internal or external model), and their professional experience, significantly impact the strength of collaboration. To assess the implementation of teamwork, we developed a complex index of collaboration among school staff. Using multivariate linear regression analysis, we examined whether institutional variables (e.g., school type, student composition, and pedagogical challenges) or SSP-related variables (e.g., SSP gender, education level, and professional characteristics) influence the successful establishment of collaboration among school staff. The results showed that school-related factors have a stronger influence, especially when the SSP is employed as full-time staff in a particular school (an internal model of school support). In addition, the composition of the student body has a significant impact.

Keywords: school support staff, teamwork, teacher efficiency.

Student Experiences in an Alternative Teacher Preparation Program for Early Childhood Educators

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The teacher shortage in the United States, while not unique to early childhood education (ECE), has hit early care and education programs especially hard because workers often have longer hours, lower pay, and fewer healthcare benefits (Center for the Study of Child Care Employment, 2020). The Covid pandemic exacerbated cracks in the already fragmented ECE system (Bipartisan Policy Center, 2020), as some programs closed and were unable to reopen due to staff shortages. Thus, we designed an innovative alternative ECE teacher preparation pathway to address the need for teachers.

The ECE Online Workforce Program is a two-year, bachelor's degree and licensure program for professionals working in childcare settings. Courses are online, allowing students to maintain employment and keep healthcare benefits while pursuing degrees (Olson & Werhan, 2005). Students receive credit for work experience, flexible student-teaching options, and financial and academic supports (Humphrey et al., 2008).

The purpose of this longitudinal, mixed-methods study is to understand students' experiences in the Program. Most are non-traditional students, 98% have jobs, and 69% work 40+ hours a week. Enrolled students (*M age=35, 66% from low-income households*) complete surveys at the beginning, middle, and end of the program regarding personal goals, program strengths, and challenges. They also complete survey measures assessing teaching self-efficacy5 and emotional well-being (Cohen et al., 1983).

We used a consensual qualitative research approach (Hill et al., 1997) to code qualitative data. Results indicate that time management, workload, and technology are especially challenging for students. Instructor support, organized online course materials, and flexible field experiences are essential to student success. Preliminary quantitative analyses indicate significant improvements in students' teaching ability after program completion. Paired samples t-tests indicate that students' teaching self-efficacy for classroom management and instructional strategies increased significantly from the beginning to the end of the program *[t(28)=-3.00, p=.006; t(28)=-3.24, p=.003]*. We also found significant gains in emotional well-being over time *[t(28)=-3.26, p=.003]*. Findings have implications for alternative teacher preparation programs and for other programs designed for non-traditional, working students.

Keywords: Teacher Shortage, Early Childhood Education, Alternative.

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Emergent embeddedness of Futures thinking in teacher education and postgraduate programmes in Education

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This proposal explores the benefits and challenges of the application of futures studies-based tools in the context of teacher education and postgraduate programmes in education. This work proposes several philosophical underpinnings of futures studies, arguing that there is a need to facilitate processes that allow the development of a "capability to aspire" (Appadurai, 2004; Facer, 2021) and hope (Ojala, 2015) enabling people to envision and pursue desirable individual, community-based and societal futures in the context of education. The work proposed is founded in various pioneer courses and interventions developed since 2023 to now both at undergraduate and postgraduate level.

A high participatory strand is present in the courses, through the development of sequential interventions based on theory first, followed by workshop-based sessions. Online sessions and on campus sessions are proposed in a hybrid model. The aim of the study is to identify and put in place good practices that can provide the basis for replication and innovation to continue a hands-on research-based intervention in the arena of teacher education and postgraduate courses in education.

Several tools traditionally used in field of futures studies have been explored with the aim of expanding long-term futures perspectives in educational futures through the development of a module on futures thinking in the context of education. The work explores the use of tools such as long-term scenarios and visions for the future; Political, Economic, Social, Technological, Legal, and Environment (PESTEL) analysis; the futures wheel (Glenn, 2009), and Causal Layered Analysis (Inayatullah. 2008). This exploration aims at deepening into the future and create awareness about possible futures in education and how we place our *selves* (Markus and Nurius, 1986) in those spaces. At the centre is the professional as an agent of change in the available and emergent ecologies of learning. Data will be collected through the analysis of the course outcomes and students' discussions to apprehend emergent changes through the inclusion of futures thinking perspectives.

Keywords: long-term Futures thinking, futures literacy, sustainable development, futures.

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State of the Art on eTwinning as a Tool for Enhancing English Learning in Primary Education

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This proposal presents a comprehensive review of the current state of research on eTwinning as a tool for improving English language learning in primary education. Over the past decade, digital collaborative platforms have gained recognition for fostering communicative competence, intercultural awareness, and student motivation in foreign language acquisition. Among these, eTwinning has emerged as a widely implemented initiative within European schools. The existing literature highlights the potential of eTwinning in enhancing English learning outcomes by integrating authentic communicative tasks in a real-world context (Demir & Kayaoğlu, 2021). Studies employing mixed-methods approaches demonstrate that students engaged in eTwinning projects develop improved fluency, accuracy, and confidence in oral and written communication. Additionally, research suggests that digital collaboration strengthens students' motivation by providing meaningful interaction with peers from different linguistic and cultural backgrounds (Napal-Fraile et al., 2024). However, challenges such as the need for teacher training, digital literacy, and equitable access to resources remain key areas for further exploration. This study synthesizes recent findings to outline trends, gaps, and future directions in the use of eTwinning for primary English education. The discussion will emphasize the methodological approaches employed in prior research, highlighting the advantages of mixed-methods approaches with the addition of sentiment analysis.

Keywords: Telecolaboration, eTwinning, Internationalization.

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Exploring eTwinning in Initial Teacher Education

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Since 2005, eTwinning has promoted international collaboration among European teachers and students, with significant impacts on pre-primary to secondary education. Yet, its role in Initial Teacher Education (ITE) is less explored. Starting in 2012, the Teacher Training Institutions (TTI) initiative integrated eTwinning into teacher preparation. By 2021, TTI evolved into eTwinning ITE, expanding its scope. However, systematic research on eTwinning in ITE, especially post-2021, remains limited. This study reviews existing literature, identifies gaps, and suggests future research paths.

A systematic review of peer-reviewed publications and policy reports from 2012 to 2024 was conducted, focusing on studies published since 2021. The selection criteria included empirical studies, theoretical frameworks, and impact assessments of eTwinning in teacher education. Thematic analysis was used to synthesize findings and categorize them based on their research focus and methodology.

Research on eTwinning in ITE is limited. While studies before 2021 highlighted potential benefits, empirical evaluations of the updated eTwinning ITE program are scarce. Recent research has started to investigate its impact, such as Napal-Fraile et al. (2024), who analyzed pre-service teachers' views on eTwinning in science learning. The literature calls for more longitudinal studies to assess its impact on pedagogical and professional development (e.g., Redecker & Punie, 2017; European Commission, 2022).

More research is needed on eTwinning in ITE, focusing on pre-service teachers' digital skills, international collaboration, and career paths. As digital education and transnational cooperation gain importance in teacher training, expanding studies on eTwinning ITE is essential for informed policy and practice.

Keywords: Internationalization, eTwinning, Telecollaboration.

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Preparing Students for a Digital World

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The International Computer and Information Literacy Study (ICILS) is an international large-scale assessment that has been designed to respond to a question of critical interest: How well are students prepared for study, work, and life in a digital world? ICILS collects data from students enrolled in their eighth year of schooling (with the average age of students being 13.5 years or above).

The study measures international differences in students' computer and information literacy (CIL)—the ability to use computers to investigate, create, and communicate effectively at home, at school, in the workplace, and in the community. In addition to student achievement data, the study collects a rich array of contextual data on students' homes and school environments that could be used for secondary analysis and further research.

Digital literacy education is taught as a standalone subject and is integrated into teaching and learning across subjects. This is why the study collects data from teachers of all subjects taught to eighth-grade students.

Students' critical evaluation of the relevance, accuracy, plausibility, and social consequences of digital information are essential skills in an increasingly digital world. These skills are central to what is assessed and reported on in ICILS.

In the poster, IEA points to the data and other available sources from ICILS 2023 to highlight findings pertinent to the discourse on "digital natives" and the "digital divide connected to gender and social economic status." In addition, the poster will provide classroom examples that may be used to help students develop the information evaluation skills that are essential to their studies and successful broader engagement in their digital worlds.

Keywords: Digital competence, Computer and Information Literacy, ICILS.

Tool for Assessing Sexual Knowledge of Adolescents with Intellectual Disabilities

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Introduction: Comprehensive sexual education (CSE) and access to information about sexual and reproductive health and rights (SRHR) are crucial for adolescents with intellectual disabilities (ID). Shielding them from clear SRHR information can make them more vulnerable to abuse. Previous research has shown that individuals with ID have limited sexual knowledge, which is essential for developing positive sexuality. This study aimed to validate and ensure the reliability of the SexKunn assessment tool for measuring the sexual knowledge of people with ID in Norway. Additionally, we aimed to identify potential knowledge gaps among the participants and highlight their potential impact.

Methods: Thirty-seven individuals with ID completed one assessment, and 20 participants completed a retest. Clinicians' (n=23) views on the assessment tool were measured to obtain face validity. Positive and negative agreement analysis was used to identify potential dimensions in the data.

Results: A weighted Cohen's kappa for the test and retest of the overall scores was considered substantial. Clinicians described acceptable face validity with high positive value scores and low negative burden scores, while also suggesting improvements. The study identified that participants lacked knowledge about female genitals, hygiene, appropriate touching/sexual acts with friends/intimate partners, and contraception. SexKunn proved to be a feasible assessment tool to measure sexual knowledge in people with ID.

Discussion: The mapping process should be engaging and supportive, aiming to identify knowledge gaps to provide appropriate guidance and education. A lack of sexual knowledge in people with ID may violate their sexual rights. After mapping, individuals or groups should always receive education and guidance to address identified knowledge gaps. SexKunn can also be useful in teaching by presenting the pictures and questions as learning objectives. The purpose is to foster a sexuality-friendly environment, promote SRHR, serve as a basis for teaching and guidance, and prevent sexual abuse.

Keywords: comprehensive sexual education, mapping tool, intellectual disabilities.

Teachers' diagnostic competences in the context of school legislation: a foundation for differentiated teaching in education

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The author explores the issue of teachers' diagnostic competences within the current legislative and curricular framework of pre-primary and primary education. School legislation in the Slovak Republic currently recognises pedagogical diagnostics as part of support measures at the school level. Pedagogical diagnosis thus serves as an essential foundation for implementing the principles of inclusive education in school practice. The shift in legislation presents challenges for teacher education as well as for the professional development of practising teachers. The need to develop teachers' diagnostic competences is further underscored by research findings. A study conducted on a sample of 926 pre-primary and primary teachers indicates that teachers often feel uncertain when identifying the educational needs of pupils and when preparing learning tasks tailored to their individual needs.

Introduction: School legislation has explicitly mentioned inclusive education in the School Act only since 2021. Inclusive education is understood as teaching that is based on equal opportunities, respect for the educational needs and individual characteristics of pupils, and support for their active participation in school activities. Based on the results of pedagogical diagnosis, teachers in kindergartens and primary schools should be able to design learning tasks appropriate to the needs of the pupils they educate.

Methodology: The research instrument used was a questionnaire. The research sample consisted of a total of 926 teachers: kindergarten teachers (N = 205), primary school teachers (N = 375), and lower secondary school teachers (N = 346). The research data were analysed using descriptive statistical methods. Among the surveyed teachers, 160 participants selected one of the following three response options: 1 – strongly disagree, 2 – disagree, or 3 – somewhat disagree.

Results: The analysis of the collected data revealed that some kindergarten and primary school teachers do not feel confident in designing learning tasks that align with the educational needs of their pupils.

Table 1: Teachers' ability to create tasks appropriate to pupils' learning needs in relation to their level of education

	1	2	3	4	5	6	mean
Kindergarten teachers	4	8	38	72	47	36	4,3
Primary education teachers	1	12	37	88	146	91	4,7
Teachers of lower secondary education	3	20	37	96	130	60	4,5
N	8	40	112	256	323	187	

Legenda: 1 - strongly desagee, 2- disagree, 3 – disagree somewhat, 4 – agree somewhat, 5 – agree, 6 – strongly agree

A total of 160 teachers (17.3% of the sample) indicated one of the three response options: 1 – strongly disagree, 2 – disagree, or 3 – somewhat disagree. A particularly striking finding is that as many as 79 of these 160 teachers had more than 20 years of teaching experience.

Discussion: Differentiated instruction and the adaptation of learning tasks are fundamental principles of inclusive education. However, the question remains whether teachers' difficulties stem from a lack of experience with differentiated instruction or from inadequate knowledge of the pupils they teach. Addressing this issue is crucial for both initial teacher training and continuing professional development.

Keywords: teacher preparation, diagnostic competence of teacher, professional development of teacher.

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Inclusive education in current conditions of school legislation and practice

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In this theoretical study, the author discusses the most significant legislative changes affecting the education of children and pupils with special educational needs in the context of school practice over the last decade. It focuses particularly on the specifics of educating pupils with SEN in kindergartens and primary schools. The study describes the current legal status of inclusive education in school legislation, with particular attention given to support measures and the requirements placed on teachers in relation to their implementation. The definition of inclusive education in school legislation was only introduced by the amendment of the School Act in 2021, in line with the transformation of the guidance system and the amendment of the School Act (§131). Under this amendment, the first level of support is provided by all teaching staff. The activities at this level are carried out by teachers and include pedagogical diagnosis and the development of inclusive education. The teacher's role is to provide the first level of educational support to children and pupils based on the pedagogical diagnosis conducted. Legislative documents concerning school policy and curriculum guidelines formulated at the level of school policies were analysed. Based on a content analysis of these documents, it appears that diagnostic competence is emphasised as a central and well-established element of the education system.

Introduction: Inclusive education remains a key issue in education policy in Slovakia. Although the Slovak Republic ratified the Convention on the Rights of Persons with Disabilities in 2010, inclusive education was only introduced into school legislation in 2021. At present, it is a mandatory requirement to accommodate the individual educational needs of all children and pupils and to provide them with appropriate support to help them achieve their educational goals.

Methodology: We employed qualitative content analysis methods. Legislative regulations concerning the education of children and pupils in kindergartens and primary schools were examined. Particular attention was also paid to the Law on Pedagogical and Professional Employees, which defines the legislative framework for teachers' professional development.

Results: Based on the analysis of school legislation and curriculum documents, we conclude that the diagnostic competence of teachers has long been embedded in professional standards for teachers in Slovakia. However, its explicit legislative incorporation into the School Act was only implemented with the amendment of the act in 2020.

Keywords: inclusive education, teacher, education.

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Cultivating Global Competence Through Food: A European Initiative for Food Literacy

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In today's interconnected world, global competence is crucial for educators. FoodEducators is a European initiative implemented across 15 countries, addressing this need through food education and literacy programs integrated with teacher training and support. Recognizing the significance of issues like cultural differences, and sustainable development, the program aims to equip teachers with the skills and knowledge to foster global competence in their students through the lens of food.

An important part of the program is the that resources and trainings are offered in both English and the 15 local languages, allowing for maximum participation and support for any teacher. Throughout the year teachers are asked to share (again in their local language) their evaluation and use of the educational resources. In the poster we will present interesting findings from these questionnaires. A total of 1968 teachers completed our questionnaire, from 14 countries: Croatia, Czechia, Greece, Italy, Hungary, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Portugal.

The program addresses several key challenges:

- Cultural Diversity: Food is deeply intertwined with culture, offering a tangible entry point for exploring cultural differences and challenging stereotypes. The program uses food as a vehicle for understanding diverse perspectives and worldviews, ranging from local culinary traditions to global food systems and their environmental impact. In 2024 the most popular topic teachers reported (either in first or second place) was food waste and food loss. However, there was a variety of topics that reached second or third place. For example, in Turkey it was healthy and sustainable breakfast and in Lithuania definition of food health, and in Italy – food system map. Food systems is one of the unique topics we are incorporating into our food literacy resources.

- Sustainability and food literacy: The program emphasizes the link between food choices and sustainable development in a holistic theoretical framework of food literacy. Teachers are trained to educate students about sustainable agriculture, food waste reduction, and the environmental impact of food production and consumption.

By integrating food education with teacher training, this initiative aims to cultivate global competence in both teachers and students, fostering a deeper understanding of interconnectedness, promoting sustainable practices, and encouraging positive interactions across diverse cultural backgrounds. The project's impact will be evaluated through pre- and post-training assessments of teacher knowledge and skills, as well as student learning outcomes.

Keywords: food literacy, food education, cultural diversity.

The role of altruism and stability: Pilot research on foster parent motivations in Hungary

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Foster parents play a pivotal role in the child protection system, particularly in Hungary, where the legal framework emphasises family-based care. Understanding the motivations behind becoming a foster parent is crucial for ensuring the long-term quality of foster care. Our pilot study aimed to identify key factors influencing foster parenting decisions and to explore how various social and demographic variables impact these motivations. We collected data from 102 foster parents through a quantitative survey, analysed using IBM SPSS software. The results revealed significant correlations between marital status, educational attainment, and financial situation, highlighting key motivations such as altruism and providing a stable home for children. Notably, family stability and altruism demonstrated a strong relationship ($p=0.046$), while lower educational levels were associated with family-centred motivations ($p=0.024$). The study concluded that intrinsic motivations, such as empathy and altruism, play a more defining role than external factors, underscoring the need for targeted support for foster parents to improve the care of vulnerable children.

Keywords: foster parent, motivation, child protection.

The Role of Teachers' Support Staff in Engaging Parents from Diverse Cultural Backgrounds: Insights from a Parent Survey

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Effective communication between teachers and parents is crucial for student progress. In the digital age, parents face increasingly complex educational challenges that demand deeper school engagement. Beyond exchanging information, parents require counseling and training to address these challenges. However, teacher training primarily prepares teachers for classroom instruction, leaving little room for addressing parental needs. Additionally, teachers' heavy workloads often hinder their ability to support parents (Epstein, 2016; Sylaj, 2020; Smith et al., 2022; Bacskai et al., 2023). Our research investigates whether parents' perceptions of school-provided support improve when school support staff, in addition to teachers, offer extensive assistance (Masdeu Navarro, 2015; OECD, 2019; Csók and Pusztai, 2022). We hypothesize that the active involvement of school support staff—such as school social workers, school psychologists, and teaching assistants—not only enhances parents' engagement both at school and at home but also positively impacts student achievement. Furthermore, we hypothesize significant differences based on background variables, such as school type, school sector, students' gender, families' social status, and family structure, in the extent to which school support staff actively contribute to school engagement alongside teachers. The target population for this research consisted of parents with children attending ISCED 2-3 institutions across Hungary, Romania, and Ukraine (N=1000). Schools were selected based on quotas derived from educational statistics and school performance data. Multivariate statistical methods were used to analyze the data. Our results indicate that the social background of a school's student body significantly affects the extent to which teachers use school support professionals to engage with parents. Our data show that for disadvantaged but high-achieving students, teachers rely heavily on the support of school support staff to promote effective parental engagement.

Keywords: teachers' support team, parental involvement, diverse cultural context.

Does it matter who runs the school? Differences in parental involvement by school provider in Hungary based on the National Competence Measurement

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In today's education, the relationship between parents and schools must be based on shared responsibility, equality and partnership. As the role of schools in society evolves, so do the expectations of parents, teachers and policy makers. Effective collaboration between parents and schools is key to children's academic success, as parental involvement has been shown to increase student achievement, motivation and engagement within the school community. A significant body of national and international research highlights that the structure and governance of schools significantly influence the form, extent and opportunities for parental involvement. The aim of this study is to explore the complex web of relationships between school stakeholders and parents, based on different social groups and multiple indicators. Particular attention is paid to differences in parental involvement between different school governance models, especially between public, church and foundation schools. Using data from the site-level database of the National Competency Measurement 2022, we analyse patterns of parental involvement in Hungarian primary schools, with a special focus on the impact of school type. Our results show that parental expectations and active participation are significantly higher in parochial schools than in state and foundation schools. The study also confirms that the type of school sponsor plays a crucial role in shaping the intensity and nature of parental involvement, leading to significant differences between governance models. Three main barriers to parental involvement are identified: students from lower socio-economic backgrounds tend to develop greater autonomy and are less likely to seek parental involvement in school activities; parents from low-income backgrounds often feel uncomfortable in the school environment, which discourages them from active participation; and parents from lower socio-economic backgrounds are less likely to seek parental involvement in school activities. Barriers to parental involvement are often related to lifestyle factors, cultural inequalities and inadequate institutional support.

Keywords: parental involvement, National Competence Measurement, maintaining contact.

Step forward with foott printts: your companion in teacher training

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FOOTT PRINTTS, standing for 'Focus on Teacher Training - Practical Guidelines for In-Service Teacher Trainers', is an EU-funded Erasmus+ cooperation partnership with seven countries focussing on teacher training across Europe. The Arnsberg District Government brings together teacher training institutions and organisations to establish a holistic quality approach to national and international continuous professional development (CPD). With global issues like teacher shortages and teacher dropouts, the importance of in-service teacher training has become increasingly prominent.

We focus on in-service teacher trainers and the organisational structure of teacher training to combine research-based results and practical needs in CPD. Our goal is to ensure international understanding and agreement on quality standards for teacher CPD. This includes the identification of proven methods and structures, the development of a comprehensive and easily accessible guidance framework concentrating on practical implementation, and the exchange of successful strategies.

Therefore, we consider the following key milestones:
1. Theory and Literature Review: Establishment of hypotheses and indicators for quantitative analysis.
2. Sequential Mixed Methods Data Collection: Quantitative and qualitative data collection in all participating countries.
3. Framework: Development of a guidance framework for teacher trainers based on the research.
4. Practical Guidelines: Interactive, adaptable, and ready-to-use input within the framework modules for teacher training.
5. Peer Learning and Networking: Conferences and other events to peer review, disseminate, and further develop the tool to ensure sustainability.

This process ensures applicability in diverse contexts across participating countries. We are also supported by pan-European education associations and the European Commission in order to create an interactive platform that not only offers support to teacher trainers, but also provides guidance on how to improve the quality of teacher training. With the initiation of a network for teacher trainers, we also promote peer-to-peer learning and therefore support the development of key competences for teacher trainers across Europe.

Keywords: Teacher Education, Professional Development, Quality of Teaching.

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