



INTERNATIONAL SCIENTIFIC AND PROFESSIONAL CONFERENCE

**THEORY AND PRACTICE IN THE CONTEMPORARY
EDUCATIONAL CONTEXT**

CHALLENGES AND PERSPECTIVES

BOOK OF ABSTRACTS

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PLENARY LECTURES

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Outsourcing the Voice: Artificial Intelligence and Student Reluctance in English-Medium Classes

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English-medium instruction (EMI) assumes that students will develop their English while studying their disciplines. In practice, many EMI students remain reluctant to learn English. Generative artificial intelligence (AI) adds a new factor: fluent English text is now ready, available and accessible on demand. This study argues that, for already reluctant students, AI may create a cycle of dependence: students who lack proficiency rely on AI-generated text, practice and learn less as a result, and therefore rely on AI even more. In this way, their own voice in English is gradually outsourced to AI. Drawing on research on EMI, learner reluctance and AI in language learning, as well as on classroom observations and insights from a student survey, the study examines how this cycle develops and what it means for language learning in EMI contexts. It suggests that AI does not create student reluctance but makes it easier to act on and harder to detect. It closes by raising the question of what is lost when students' voice in English is increasingly produced by AI.

Keywords: *English-medium instruction, generative AI, student reluctance, learner voice, AI dependence*

Mentoring as an Important Factor in the Professional Development of Preschool Educators

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Mentoring represents an important component of the professional development of preschool educators, particularly during the transition from initial education to professional practice. It is conceptualised as a collaborative and developmental process in which an experienced educator supports a less experienced colleague in acquiring professional knowledge, skills, and competencies. The mentor acts as a link between theoretical knowledge and its practical application, facilitating the development of pedagogical decision-making, interpersonal competencies, reflective practice, and professional autonomy.

The quality of mentoring depends considerably on the mentor's professional and pedagogical competencies. Effective mentors are expected to possess relevant professional knowledge, communication and collaboration skills, and the ability to model pedagogical practices and provide constructive feedback. At the same time, mentoring encompasses an important emotional dimension, as mentors support mentees in coping with the challenges and demands of educational practice. Consequently, mentoring should be understood as a holistic process that addresses the mentee's personal, social, and professional development.

The mentor performs multiple and interconnected roles. These include the roles of advisor, motivator, role model, leader, supporter, and confidant. From a functional perspective, mentoring roles can be understood as structural, supportive, and professional. The structural role involves planning, organising, coordinating, and facilitating the mentee's induction into professional practice. The supportive role encompasses guidance, assistance, encouragement, and emotional support, while the professional role focuses on developing the mentee's professional identity and competencies.

Mentoring is also a reciprocal process of professional learning. While mentors facilitate mentees' development, they simultaneously strengthen their own competencies through reflection, collaboration, and engagement with new professional experiences. Therefore, systematic mentor education and continuous professional development are essential for ensuring high-quality mentoring. Structured preparation can enhance mentors' understanding of mentoring roles, approaches, responsibilities, reflective processes, and feedback strategies.

Effective mentoring consequently requires supportive organisational conditions, sufficient resources, clearly defined responsibilities, and institutional recognition of the mentor's role. It should be viewed not as an additional isolated task, but as an integral element of professional learning and the sustained development of preschool educators.

Keywords: *mentoring, preschool educators, professional development, mentor roles, professional learning*

Early Beginnings with AI

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Artificial intelligence (AI) is increasingly present in everyday life, education, and professional practice. Using AI effectively and responsibly requires more than proficiency with specific tools. It relies on skills like defining problems, organising information, planning actions, evaluating outcomes, and critically assessing the responses generated. Such skills are closely linked to computational thinking and can be developed before children encounter AI itself.

Early childhood education therefore provides an important starting point for developing foundations that may later support meaningful interaction with AI. Through play-based activities and the use of educational robots, children can explore sequencing, logical reasoning, relationships, problem decomposition, and error correction. When children independently plan and control a robot's movement, they experience how a desired outcome depends on a carefully structured sequence of instructions. At the same time, mistakes become opportunities for identifying problems, reconsidering individual steps, and improving a solution.

These early experiences are relevant to learning how to control educational technologies of many kinds. They can contribute to ways of thinking that are important in an AI-rich environment. Difficulties frequently observed in the use of generative AI are poorly formulated tasks, inappropriate expectations of AI, uncritical acceptance of generated content, and insufficient verification of results. They can partly be related to weaknesses in problem structuring and critical judgement. Establishing the foundations of computational thinking from an early age can therefore support the development of more reflective, purposeful, and responsible approaches to artificial intelligence and its tools.

From this perspective, early engagement with computational thinking through educational robotics should not be understood merely as an introduction to programming. Rather, it represents an opportunity to cultivate cognitive habits that can later contribute to AI literacy and to the informed use of emerging technologies throughout education and everyday life.

Keywords: *computational thinking, artificial intelligence, early learning, educational robotics, AI literacy*

Systemic Challenges of Higher Education in the Era of Accelerated Technological Change

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In the modern era, higher education is undergoing significant structural changes driven by rapid technological advancement, which directly affects how knowledge is transmitted, developed and applied. Driven by digital transformation and the increasing use of artificial intelligence in contemporary education, traditional learning models are evolving rapidly. Higher education institutions increasingly face shifting and growing labour market demands that require graduates to have advanced digital competencies and the ability to navigate flexible educational pathways. At the same time, demographic decline and changing educational preferences among young people are increasingly affecting student enrolment numbers, which have trended downward over the past decade. Furthermore, generational shifts, specifically the emergence of cohorts that grew up with digital technology, such as Generation Z and Generation Alpha, are bringing new expectations regarding interactivity and shorter learning formats.

In this context, the primary challenges facing educational institutions include modernising teaching processes and developing digital infrastructure, while also enhancing educators' competencies in using new technologies. Furthermore, higher education institutions need to integrate rapidly accelerating technological changes into their curricula while upholding academic values, with the aim of enhancing the quality of education. In this way, it is possible to define strategic development directions that can contribute to building an innovative and stable educational environment.

Keywords: *higher education, digital transformation, demographic trends, competencies*

Shaping the Future: Economy, Tourism and Insights into Serbia's Development Perspectives

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Tourism is increasingly recognised as an important driver of economic growth, employment, foreign-exchange inflows, regional development, and international positioning. In Serbia, the sector has demonstrated considerable resilience and growth following the pandemic, while macroeconomic stability and rising household consumption have created a favourable environment for further tourism development. This study aims to examine the broader economic contribution of tourism in Serbia and to assess the potential effects and long-term legacy of EXPO 2027 as a large-scale development project. The analysis combines macroeconomic indicators, household consumption data, tourism expenditure estimates, and input–output analysis based on Serbia's symmetric input–output tables. The findings indicate that tourism generates substantial direct, indirect, and induced effects across a wide range of economic sectors. The estimated total impact of EXPO 2027 amounts to approximately €10.4 billion in gross value added, with indirect and induced effects accounting for the majority of the impact. The post-event legacy phase represents approximately 42% of total GVA effects, highlighting the importance of infrastructure, improved connectivity, destination branding, international visibility, and a stronger investment environment. The analysis also indicates significant employment potential, with more than 404,000 full-time-equivalent job-years supported across all phases. These findings suggest that tourism should be approached not merely as a service activity but as an integrated platform for economic diversification and long-term development. Implications for educational policy and practice include strengthening knowledge-intensive skills, digital competencies, innovation, sustainability, and interdisciplinary approaches connecting tourism, technology, business, and regional development.

Keywords: *tourism, economic development, EXPO 2027, input–output analysis, gross value added, sustainable development, regional development*

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1. CONTEMPORARY EDUCATION AND PROFESSIONAL DEVELOPMENT

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Beyond Language Proficiency: Student Mobility Challenges and French for Academic Purposes Programme Design

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As the number of Serbian students participating in academic mobility programmes continues to grow, adequate preparation has become increasingly important. While language proficiency is essential, many students encounter additional academic, methodological and sociocultural challenges that hinder their successful integration into higher education abroad. This study aims to identify the competencies required for successful academic mobility in France and to provide a basis for designing a French for Academic Purposes programme specifically tailored to Serbian students. The study employs a qualitative field-based methodology combining questionnaires and semi-structured interviews with Serbian students who have completed a period of academic mobility in France. In addition, authentic academic and administrative documents used in French universities are collected and analysed to identify the linguistic, academic and institutional demands students face before and during their mobility. Preliminary findings indicate that beyond linguistic difficulties, students report insufficient knowledge of French academic culture, the organisation and functioning of the university system, as well as the methodological practices expected in the French academic context. These results demonstrate that language competence alone is not sufficient for successful academic integration. The study concludes that pre-mobility preparation should integrate not only linguistic, but also academic, methodological and intercultural competencies into a French for Academic Purposes programme designed to meet the needs of Serbian students. Such a programme could better prepare Serbian students for the academic demands of French higher education, facilitate their academic and social integration and improve mobility outcomes.

Keywords: *French for Academic Purposes, academic mobility, academic integration*

Cognitive Conflicts in the Acquisition of Geometric Concepts among Students of Preschool and Primary Education

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Geometry is one of the key areas of mathematics education, as it contributes to the development of spatial reasoning, visualisation and the ability to connect mathematical concepts. The acquisition and integration of geometric concepts are of great importance in the initial education of future preschool and primary school teachers, since they form the basis for high-quality geometry teaching. This paper examines cognitive conflicts in the acquisition of basic geometric concepts among first-year students of the Faculty of Education in Bijeljina, enrolled in the Preschool Education and Primary (Class) Teaching study programmes. The aim of the research was to identify and analyse cognitive conflicts and to compare the achievements of students in these two programmes with regard to geometric concepts. The study was conducted on a sample of 60 students, 30 from each programme, during the 2024/2025 academic year. Data were collected through a test administered as part of the final examination in the courses Elementary Mathematical Concepts and Mathematics 1. The results showed the presence of cognitive conflicts in both groups, particularly in understanding hierarchical relationships among geometric concepts and in tasks requiring spatial visualisation. Statistical analysis showed that Primary Teaching students achieved significantly better results than Preschool Education students. The most frequently observed difficulties concerned distinguishing between basic geometric concepts, understanding relationships between figures (e.g. the relationship between a square and a rectangle), and recognising geometric objects in non-standard positions. The findings point to the need to develop a deeper understanding of geometric concepts among future primary school and preschool teachers. It is particularly important to apply teaching approaches that enable students to recognise and overcome the cognitive conflicts that arise when acquiring content related to geometric concepts.

Keywords: *geometric concepts, cognitive conflicts, mathematics*

Educational Biographies as a Space for the Formation of Pedagogical Beliefs

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Educational biographies represent an important source for understanding how individuals construct meanings of education and shape their professional beliefs. Within the narrative and biographical approach, educational phenomena are understood through the interpretation of personal experiences integrated into coherent life stories. The aim of this study was to examine which experiences pedagogy students identify as significant in shaping their pedagogical beliefs and their understanding of educational processes. The study was conducted using a qualitative research design. Data were collected through written semi-structured interviews with open-ended questions aimed at reconstructing students' educational experiences. Participants were third-year pedagogy students, and the data were analysed using thematic analysis. The findings indicate that students identify experiences with teachers and educators during their schooling, family experiences, direct work with children, encounters with diversity and inclusive education, and pedagogy studies themselves as key sources in shaping their pedagogical beliefs. Pedagogy studies were particularly emphasised as a space for critical reflection and reinterpretation of prior experiences. Notably, negative experiences, such as feelings of injustice, misunderstanding, or perceived shortcomings in their own schooling, often stimulate the development of critical perspectives on educational practice. It is concluded that pedagogical beliefs are not formed solely through the acquisition of theoretical knowledge but through the continuous reinterpretation of personal and educational experiences within professional education. The findings suggest that biographical reflection should be systematically integrated into initial pedagogy education, as it contributes to the development of professional self-awareness, critical thinking, and a deeper understanding of educational practice.

Keywords: *educational biographies, pedagogical beliefs, biographical learning, pedagogy students, professional education of pedagogues*

School Safety and Bullying Perpetration: The Role of Physical and Psychological Dimensions

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Although school safety is widely recognised as a key priority in education, there is a lack of consensus among researchers and policy makers on which strategies are most effective in creating safe school environments. To address the persistent problem of bullying as one of the most important school safety issues, schools employ a variety of prevention strategies. The purpose of this study was to examine the association between bullying perpetration and the physical and psychological dimensions of school safety. Physical safety was observed by the number of safety measures, procedures, and security personnel in the school. Psychological safety was measured as a composite variable based on feelings of safety, teacher–student relationships, and peer relationships. Hierarchical multiple regression was used to analyse survey data collected from 1,526 students aged 16–18 attending 19 public high schools in Belgrade, Serbia. The findings indicated a significant negative association between psychological safety and bullying perpetration. Higher levels of psychological safety were associated with lower levels of bullying perpetration, whereas physical safety was not significantly associated with bullying perpetration. The findings highlight the importance of strengthening psychological safety in schools by fostering supportive teacher–student and peer relationships as part of bullying prevention efforts.

Keywords: *bullying perpetration, school safety, Serbia*

Mathematical Statistics, Applied Statistics, and Statistical Application: Interrelationships and Distinctions

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In professional higher education, we encounter Applied Statistics, as well as the application of Statistics within a research framework in the natural, social, and technological disciplines. Applied

Statistics translates the theoretical frameworks of Mathematical Statistics into a lower level of abstraction by adopting an intuitive approach to statistical concepts, tenets, and procedures, contextualised through real-world examples and executed via appropriate statistical software. The logical progression dictates that students first master Applied Statistics before subsequently applying it in practice. However, Applied Statistics fully utilises the mathematical apparatus as its core language, implying that the capacity to achieve a specific level of statistical literacy hinges upon the student's prior degree of mathematical education. Taking this reality as a point of departure, the question arises as to how the curriculum of Applied Statistics can be aligned with students' prior mathematical and statistical education, which will directly influence the complexity of real-world statistical problems they are equipped to solve. By examining the interconnections and distinctions among Mathematical Statistics, Applied Statistics, and the practical application of Statistics, this paper addresses the question posed while taking into account the level of students' prior mathematical and statistical education.

Keywords: *mathematics and statistics education, mathematical statistics, applied statistics, statistical application*

Henri Matisse's Artistic Work as an Inspiration for Art Workshops with Preschool Children

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Henri Matisse was one of the most influential French painters of the Fauvist movement in the twentieth century. His artistic work is rich and encompasses various forms of expression. He employed a wide range of artistic techniques and materials, making his work particularly inspiring for art workshops with preschool children through drawing, painting, printmaking, and sculpting activities, which contribute to children's development and learning in early childhood. Particularly noteworthy are his collages created during the later period of his life, from 1941 to 1954. During this time, all of his previous artistic experiences converged, resulting in his most prolific work, which is especially stimulating for art workshops with preschool children. Matisse developed an innovative collage technique using gouache, which proved to be an independent and distinctive visual language, capable of achieving the universal and timeless through simplicity. Matisse's approach was experimental; he explored relationships between colours through contrasts and transformed the shapes of figures in order to reduce forms to their essence, making his work particularly suitable for learning through play. By exploring Matisse's creative process, children can experiment with a variety of tools and materials that encourage the development of creativity and imagination and, above all, foster a positive relationship with outstanding works of art from an early age.

Keywords: *art workshops, Henri Matisse, preschool children, creativity development, artistic creativity*

From Representation to Process-Event: Epistemological Parallels Between Contemporary Art and Pedagogical Documentation

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The contemporary paradigm of preschool education places a complex demand before preschool teachers: pedagogical documentation can no longer be viewed as mere administrative record-keeping or the simple display of finished children's products. Instead, it becomes a living, emergent curriculum and a testament to the authentic experience and quality of relations that a child establishes with peers, space, and materials. This paper explores the conceptual and epistemological affinities between new forms of pedagogical documentation in early childhood education and contemporary art theories – primarily the concept of art as a "process-event" and the Deleuzian understanding of "becoming." The paper analyses how both spheres share a radical departure from traditional, representational forms of thinking that fixate on a finished object (an artwork or a child's product) and suggest a transition towards strategies of visual "mapping" of a living and unpredictable flux. Through a comparative analysis, the paper re-examines phenomena such as the introduction of controlled chaos through the form of a philosophical "diagram" and its manifestation through pedagogical provocations in educational practice. In conclusion, the article indicates that recognising art as a process-event can serve as a theoretical and methodological framework for developing a new,

relational literacy among preschool teachers, which is essential for tracking the rhythm, affects, and transformation of children's learning.

Keywords: *pedagogical documentation, process-event, representation, learning mapping, contemporary art*

Inclusive Education Through Innovative Teaching Methods as a Means of Improving the Quality of the Educational Process

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Inclusive education is one of the key principles of the contemporary educational system, aimed at ensuring equal opportunities for learning and development for all children, including children with developmental disabilities. In the preschool period, which is of crucial importance for the holistic development of the personality, the application of innovative work methods contributes to the creation of a stimulating and accessible environment in which every child can develop their potential in accordance with their individual needs and abilities. The aim of this paper is to highlight the importance of applying innovative teaching and learning methods in inclusive preschool education and their contribution to improving the quality of the educational process. Special attention is devoted to contemporary approaches, such as the individualisation of work, the integrated concept, the use of digital technologies, learning through play, project-based learning, and collaborative activities that encourage the active participation of children with developmental disabilities, that is, children who require additional support. The results of the analysis indicate that innovative methods contribute to better social integration, the development of communication and cognitive abilities, as well as greater motivation for learning among all children. It is concluded that inclusive education based on contemporary pedagogical approaches represents an important factor in improving the quality of preschool education, contributing to the development of a fairer and more humane educational system.

Keywords: *inclusive preschool education, children with developmental disabilities, innovative teaching methods, quality of education, individualised instruction*

Active Learning in the Theoretical Training of Professional Pilots

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Contemporary pilot training increasingly requires candidates to integrate theoretical knowledge with communication, decision-making, situational awareness, teamwork, and workload management. This paper examines active learning as an andragogical and didactic framework for supporting the development of professional pilot competencies during theoretical training, with particular attention to the EASA Area 100 KSA model. The analysis indicates that active learning can operationalise the KSA model by engaging candidates in professionally relevant activities, including scenario analysis, case-based discussion, collaborative problem-solving, short simulations, role-playing, formative assessment, and reflective debriefing. These methods support not only knowledge acquisition, but also knowledge application, professional reasoning, communication, and attitudes.

Keywords: *active learning, theoretical pilot training, KSA model, professional competencies, adult education*

Improving Preschool Education Through Action Research and Educator Competencies

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Contemporary preschool education demands educators who are not only practitioners but also reflective researchers of their own practice. The aim of this paper is to examine the role of action research and educator competencies in improving the quality of preschool education, with particular attention to the holistic approach to child development and the cooperation of preschool institutions with cultural institutions in their community. The paper is based on a review of relevant theoretical and regulatory sources, as well as practical examples from preschool practice, including collaboration with museums, cultural centres and libraries. The review shows that participation in action research fosters

educators' critical thinking, communication skills and professional competencies, enabling them to continuously improve their educational practice. The holistic approach, grounded in five developmental principles, requires educators to apply an integrative model that connects all aspects of a child's development – physical, cognitive, emotional, linguistic and social. Cooperation between preschool institutions and cultural institutions proves to be a significant factor in children's aesthetic, cultural and cognitive development, enriching formal education with non-formal and informal learning experiences. Successful examples of partnership between preschool institutions, museums, cultural centres and libraries confirm that such collaboration expands the boundaries of children's learning and strengthens both the competencies of educators and the quality of the overall educational environment. It is concluded that the continuous professional development of educators and their systematic engagement in action research, alongside strategic partnerships with cultural institutions, are essential conditions for improving preschool education.

Keywords: *action research, educator competencies, holistic approach, cultural institutions, preschool education*

Nurturing Creativity: Art Education and Children's Holistic Development

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This paper examines the role of art education in fostering creative expression and holistic development among preschool children. Although creativity is widely recognised as an essential human capacity, its character within early childhood remains insufficiently addressed in everyday pedagogical practice. The aim of the study is to highlight the importance of art and aesthetic education as means of supporting preschool children's authentic creative expression, and to examine the conditions under which creativity is most effectively encouraged in kindergarten settings. The paper draws on a review of relevant theoretical and pedagogical literature concerning creativity, aesthetic education and children's artistic development, combined with practical examples and reflections from kindergarten practice, including the use of children's individual and group portfolios as a documentation tool. The findings indicate that creativity develops through an interplay of intellectual abilities, knowledge, personality traits, motivation and environment, and that the educator's role as a sensitive, non-directive partner is decisive for the quality of children's creative outcomes. The organisation of both indoor and outdoor learning spaces – including dedicated art corners, natural-material activity zones and a "Zen garden" – was shown to meaningfully support spontaneous creative exploration. Individual and group portfolios proved valuable for monitoring children's developmental progress and informing reflective educational practice. The paper concludes that a holistic, integrated approach to art education, supported by competent and flexible educators, is essential for nurturing children's creative potential and should occupy a central place in preschool curricula.

Keywords: *creativity, aesthetic education, children's portfolios, educator competencies, holistic development*

Participation of Children in Public Events Through the Reflection of Practitioners

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Kindergartens, as well as other institutions that children attend, form a community that shapes the conditions of growing up, contributing to the development of knowledge, belonging, social participation, and children's identities. A bilingual kindergarten in the centre of Novi Sad offers a resource-rich but also challenging environment. Through a reflective approach and self-evaluation over the past three years, children's participation in public events and the use of the community as a learning environment have been monitored, relying on the concept of child well-being as that of a competent child rich in potential. We observe that children's and educators' participation in public events is mostly one-sided, with limited two-way collaboration and insufficient child participation. Public events rarely enable deeper exploration and learning driven by children's questions, while cooperation remains sporadic and without continuity. The professional support team, through the research "Geography of Childhood" in Novi Sad, aimed at addressing the identified challenges and contributed to a better understanding of the context of growing up. Parents contributed by creating a shared Google Map of community resources, enriching educators' planning and initiating reflection

and improvement of practice. Starting from these challenges, practice has been directed towards enhancing children's participation through meaningful involvement and developing higher-quality collaboration with the community. Special emphasis is placed on children as active participants whose interests drive shared learning, while respecting diversity and the perspectives of children of foreign nationality and their families, thereby contributing to a more meaningful connection between the kindergarten and the community.

Keywords: *participation, reflection, kindergarten*

Between Freedom and Responsibility – Different Perspectives on Democratic Practice in Kindergarten

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The purpose of this paper was to explore how democratic educational practice functions in a high-quality preschool institution whose educational programme is based on democratic values and principles. Drawing on relevant literature, the paper examines the historical development of democracy, from early civilisations to contemporary interpretations, and analyses legislative frameworks that define democratic education. Particular attention is given to the relationship between democracy, freedom and responsibility in early childhood education. A qualitative research approach was used to examine how a democratically oriented preschool community, including children, educators and parents, experiences, develops and practices democracy within its cultural context while identifying challenges arising in everyday practice. The research was conducted at the Preschool Institution Jare i Mare. The sample included seven educators, seventeen parents and ten children aged four to seven. Data were collected through questionnaires for educators and parents, interviews with children, and mapping of the preschool environment. The findings indicate a high level of awareness among educators and parents regarding the importance of creating a democratic environment that supports children's development from the earliest age. The results emphasise the value of children's active participation in family and preschool life, enabling them to become autonomous individuals whose opinions, decisions and initiatives are respected. Although the limited sample does not allow broad generalisation, the findings suggest that the Serbian National Curriculum Framework provides a strong foundation for fostering democratic practice and supports educators and parents in creating environments that encourage participation, responsibility and respect for children's rights.

Keywords: *democracy, participation, decision-making, right of choice, responsibility*

What Precedes Learning? Processes within a Group's Identity: Being, Becoming, and Belonging

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This paper focuses on the processes that precede learning. It is based on the understanding that a child's experience of the world and of themselves within it is constructed through relationships with adults and other children. Children enter educational settings with a history of relationships – with their families, communities, cultures, places, stories, other children, and adults. Drawing on Loris Malaguzzi's concept of the hundred languages of children, we explore how listening becomes a pedagogical strategy in the process of learning with children. Since this paper is grounded in the understanding that a child's sense of belonging is developed through relationships, a reflective analysis of pedagogical practice in a Reggio Emilia-inspired kindergarten in Florida confirms that these relationships also include materials and the physical environment. The paper presents insights gained through observing an environment that fosters a sense of belonging and is designed to promote openness without barriers and connection rather than control. Our observations indicate that factors such as listening, curiosity, and the environment support three key processes within the group: being (being seen); becoming (moments in which new ideas emerge through experiences and relationships); and belonging (the ways in which children, as partners, develop a sense of belonging).

Keywords: *learning, process, relationships, belonging, listening, environment*

The Grammar of Materials: From Exploration to Meaning-Making

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Recycled and unstructured materials hold considerable potential for encouraging children's exploration, play and creative expression, yet their possibilities are often not fully recognised in educational practice. The aim of this paper is to show how various open-ended materials foster exploration, collaboration, symbolic play and meaning-making among nursery and preschool children, with particular focus on the role of the preschool teacher in ensuring complete freedom in the use of materials and in providing unobtrusive guidance without predetermined solutions. The research was carried out using a qualitative approach in two groups of children. Data were collected through anecdotal notes, photographs, video recordings and the teachers' reflective notes. In one group, attention was focused on the gradual introduction of various unstructured materials and on following the development of children's play, while in the other group the possibilities of using these materials in creative, symbolic and dramatic activities were explored. The findings show that children used the materials in original and unpredictable ways, combining them in line with their own interests. Play progressed from sensory exploration towards construction, collaboration, symbolic play and dramatic expression, with children independently creating meanings and exchanging ideas. It is concluded that open-ended materials are a powerful stimulus for active learning and creative expression. The results highlight the importance of a carefully designed environment and of teachers' reflective practice in creating a stimulating space for children's learning, play and development, as well as the need for teachers to refrain from imposing predefined outcomes and solutions in the play process.

Keywords: *recycled and unstructured materials, children's play, reflective practice*

Approaches to Learning Physics Among University Students

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Understanding how university students approach learning physics is important for designing instructional practices that promote meaningful learning rather than memorisation. Learning physics requires both conceptual understanding and procedural competence; however, students often combine deep and surface approaches to learning. Exploring these approaches can provide insights for improving physics teaching in higher education. The aim of this study was to examine the learning approaches of undergraduate students enrolled in physics courses at the University of Novi Sad, with a particular focus on conceptual understanding, problem solving, memorisation, learning resources, and self-regulated learning. A survey was conducted among 68 undergraduate students using a questionnaire consisting of Likert-scale items, a ranking task, and open-ended questions. The findings indicate that students predominantly value conceptual understanding and rank it as the most important component of learning physics, followed by problem solving. Memorisation of formulas and learning exclusively from scripts were considered less important. At the same time, responses reflected the use of exam-oriented strategies, such as focusing on frequently tested formulas and typical problem types. Students also reported frequent use of digital resources, particularly online materials and AI-based tools, to support their learning. Students reported seeking additional explanations when they did not understand a concept, indicating the use of self-regulated learning strategies. These findings contribute to a better understanding of students' approaches to learning physics and may inform the further development of teaching and assessment practices in university physics education.

Keywords: *university students, approaches to learning, physics teaching, higher education*

Adapted Concept Test for Peer Instruction: Analysis of a Primary-School Physics Lesson

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Peer Instruction is a teaching method designed for use in a university-level physics course, adapted for use with older students, but rarely used with younger learners. The method is described in *Peer Instruction: A User's Manual*, which provides Concept Tests as an instructional material required for its implementation. The primary objective of the method is to actively engage students with conflicting viewpoints in discussions of the considered physics concept. The aim of this study was to develop an adapted Concept Test for use during Peer Instruction in a primary-school physics lesson and to analyse its implementation. The study was conducted with 41 seventh-grade students, during a lesson on Archimedes' law and the floating and sinking of bodies. The research methodology included classroom observation and the application of the adapted Concept Test designed for Peer Instruction. During the lesson segment using the Concept Test, students engaged in individual responses, peer discussion, and repeated answering. Data collection was based on student responses to the Concept Test and classroom observation during the lesson. The findings indicate that the use of the adapted Concept Test increased students' participation. Differences between students' initial and final responses on the Concept Test suggest that peer discussion increases the number of correct answers. However, the teacher identified classroom management as a challenge. The findings imply the need to develop similar resources in educational practice, particularly with regard to the promotion of peer discussions. In this context, adapted Concept Tests used within Peer Instruction may represent a valuable resource for teaching physics.

Keywords: *Peer Instruction, peer discussion, primary school physics*

Opinions of Primary and Secondary Physics Teachers on Multimedia Use in Teaching

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Contemporary education is increasingly shaped by digital technologies, with multimedia content representing an important resource for improving teaching quality. In physics education, multimedia can facilitate the visualisation of abstract concepts and natural phenomena, increase student engagement, and contribute to more effective knowledge acquisition. The aim of this study was to examine the opinions of primary and secondary school physics teachers regarding the use of multimedia in teaching, the frequency of its implementation, and teachers' perceptions of its benefits and limitations. The study was conducted using a survey on a sample of 51 primary and secondary physics teachers. The research instrument was an electronic questionnaire consisting of 15 items, including multiple-choice items on familiarity with and use of multimedia and related digital tools, Likert-scale statements on attitudes towards multimedia use in teaching and one open-ended question. The findings indicate that all respondents use multimedia in teaching to a certain extent, with presentations, simulations, and video materials being the most frequently applied forms. Most teachers reported that multimedia enhances students' attention, facilitates learning and makes instruction more accessible and engaging for contemporary learners. The main barriers identified were insufficient technical equipment in schools and inadequate conditions for effective multimedia implementation. It can be suggested that multimedia can play an important role in modern physics teaching. However, its effective implementation requires improved school infrastructure and a balanced integration of digital tools with traditional teaching approaches.

Keywords: *multimedia resources, physics education, teachers' views*

Teacher Professional Development as a Factor in Improving the Quality of Modern Higher Education

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Rapid social, technological and educational changes place new demands on the higher education system, emphasising the importance of continuous professional development of teachers. Improving teacher competencies, developing professional identity and implementing modern teaching approaches are recognised as important prerequisites for ensuring quality teaching and successfully responding to the needs of students and modern society. The aim of the paper is to analyse the relationship between teachers' professional development, professional identity and the quality of the teaching process in higher education. The research was carried out using a quantitative approach on a sample of teachers in higher education institutions. The data were collected using a structured questionnaire and processed using descriptive statistical indicators and correlation analysis. The results show that teachers recognise continuous professional training as a significant factor in the development of professional competencies and the improvement of teaching practice. A positive relationship was observed between professional development, professional identity and the application of modern teaching methods, while insufficient institutional support stands out as one of the most significant challenges. The findings indicate that systematic investment in professional development contributes to higher quality teaching, teacher motivation and more efficient functioning of higher education institutions. It is concluded that the professional development of teachers is a strategic resource for improving the quality of higher education. The results obtained indicate the need to strengthen institutional support mechanisms, develop professional training programmes, and create educational policies that will encourage professional development as one of the priorities for higher education.

Keywords: *contemporary higher education, professional development of teachers, professional identity, quality of teaching*

Determinants of Neurodiversity and Environmental and Cognitive Load Modifications for Individuals on the Autism Spectrum

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The contemporary scientific shift towards the concept of neurodiversity redefines autism spectrum disorder as a specific neurological profile rather than solely as a set of deficits. In the context of academic teaching, genuine inclusion requires systematic adaptations of the environment and the curriculum rather than the mere physical placement of pupils in mainstream classrooms. Despite declarative legal inclusion in the region, practice still faces pronounced operational challenges. The aim of this paper is to investigate and analyse the attitudes and perceptions of primary and secondary school teachers in the region regarding key aspects of the inclusion of pupils with autism spectrum disorder (ASD): the individualisation of teaching methods, the role and effectiveness of teaching assistants, the adaptation of the physical and sensory environment, and socialisation within the class. An empirical study was conducted on a convenience sample to determine correlations between teachers' level of training and their sense of competence for practical work. The results indicate a gap between teachers' positive attitudes towards inclusion and their sense of incompetence in independently developing curricular adaptations owing to a lack of training. The system relies primarily on teaching assistants, which is perceived as a necessity but also as a risk of the child's social isolation within the class. Adaptation of the sensory environment is recognised as critical, yet it remains a technically unfeasible barrier because of the complete absence of sensory regulation rooms and high noise levels. With regard to socialisation, the double empathy problem and pronounced peer misunderstanding of the autistic communication style were identified. The implications for educational policy call for the introduction of compulsory modules on neurodiversity in initial teacher education, the reduction of pupils' executive-function load through visual support, and the transformation of school spaces.

Keywords: *neurodiversity, autism, inclusion*

Analysis of the Results of Student Evaluation as a Tool for Continuous Improvement of the Quality of the Study Programme

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The aim of this paper is to analyse the results of student evaluation of the quality of a selected professional studies programme in order to identify areas that require improvement, define appropriate corrective measures and consider the possibilities of applying them for continuous quality improvement, in accordance with the principles of the quality assurance system. The obtained results confirmed that the systematic analysis of student evaluation represents a reliable basis for decision-making in the process of self-evaluation, evaluation and improvement of programme quality. It is expected that the implemented comprehensive corrective measures will have a long-term effect on improving the quality of the institution's work.

Keywords: *student evaluation, self-evaluation, corrective measures, quality assurance, professional studies*

From Mobile-Assisted Language Learning to AI-Powered Learning: Lessons from Six Years of Research

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The rapid development of educational technologies has significantly transformed language learning over the last decade. Mobile-assisted language learning (MALL), digital educational tools, gamified platforms, and blended learning environments have created new opportunities for increasing learner engagement, autonomy, and access to language practice. More recently, the emergence of artificial intelligence has opened new possibilities for personalisation, instant feedback, and adaptive learning experiences. While AI is often presented as a revolutionary development, many of its core principles have been present in language education for years. This poster synthesises findings from a series of studies conducted between 2019 and 2024 on mobile applications, digital tools, gamification, blended learning, and teachers' perspectives on technology integration in language education. By tracing the evolution of technology-enhanced language learning, the poster identifies several recurring themes that have consistently emerged across different studies and educational contexts. These include learner motivation, autonomy, personalisation, authentic communication, gamification, and the importance of teachers' digital competence. The findings suggest that students value flexible and learner-centred approaches that allow them to take greater responsibility for their own learning, while teachers play a crucial role in facilitating meaningful and pedagogically sound technology integration. The poster suggests that artificial intelligence should be viewed not as a radical departure from previous educational technologies, but rather as a continuation and expansion of long-standing trends in language education. Understanding these developments may help educators make more informed decisions regarding the integration of AI into language teaching and learning practices.

Keywords: *mobile-assisted language learning, artificial intelligence, technology-enhanced language learning, learner autonomy, personalisation*

The Significance of Professional Internship and Career Guidance in Enhancing the Competencies of Tourism Students

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Applied studies require close alignment between study programmes, particularly those in tourism and hospitality, and the evolving needs of the labour market. Within this context, work-based learning and career guidance play an important role in students' professional development and the acquisition of competencies relevant to future employment.

This study aims to comprehensively examine the role and significance of internship and career guidance as key determinants of the quality of applied studies and the development of students' competencies in the field of tourism. Particular attention is devoted to identifying labour market needs

and designing internship programmes that correspond to the competencies and skills demanded by employers.

The primary research method is a survey conducted among tourism and hospitality students to assess their satisfaction with internship. A second survey was conducted among companies that provide internship placements for students, with the aim of identifying the key competencies and skills required in the labour market. The secondary research methods employed include descriptive, observational, and comparative methods. Based on the findings, a set of measures will be proposed to improve internship and career guidance for tourism and hospitality students. The proposed measures are expected to contribute to enhancing the quality of applied studies and strengthening students' employability by increasing their satisfaction with internship and improving the responsiveness of educational programmes to the changing needs of the labour market.

Keywords: *internship, career guidance, tourism, applied studies*

Enhancing Teaching in Product Development through a “Product-to-Career” Project Model

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The competencies that students achieve during their studies should keep pace with rapidly changing labour market demands. However, projections indicate significant fluctuation in the labour market until 2030, with structural change expected to affect about 22% of all jobs. In connection with this, it is expected that about two-fifths (39%) of workers' existing skills will be transformed or obsolete in the same period. For this reason, the pilot implementation of an integrated project model “Product-to-Career” is planned, which connects development of digital products and professional visibility of students' competencies. The aim of the research is to design the model and plan its application in the teaching process within the partnership between two higher education institutions. The methodology is based on a design-based research approach. Project management tools will be used, including a Gantt chart and a RASCI matrix. The result of the research represents a developed “Product-to-Career” model for integration in the teaching process, thereby ensuring its long-term sustainability. Within the model, students develop a digital product during classes, which they can immediately present on the labour market through a professional portfolio. Implications for educational practice concern the possible application of the model in a larger number of courses, study programmes and higher education institutions.

Keywords: *professional higher education, product development, digital products, labour market, competitiveness*

Legal Tech Transforming Legal Education: Challenges, Opportunities and Future Perspectives for Practice

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The rapid digital transformation of the legal profession, supported by the development of legal technology (legal tech) and artificial intelligence (AI), is significantly changing the skills and competencies required of future legal professionals. Traditional models of legal education, primarily focused on legal doctrine and interpretation of legal norms, face challenges in preparing students for an increasingly digital legal environment. This paper aims to examine the impact of legal tech on the transformation of legal education, with a focus on its potential, challenges, and implications for curriculum development and teaching practices.

The research is based on a normative and comparative analysis of relevant academic literature, policy documents, and examples of good practices in higher education institutions that have introduced digital technologies and AI-related content into legal studies. The findings indicate that the integration of legal tech can improve legal education by strengthening students' practical skills, analytical abilities, digital literacy, and readiness for modern legal practice. However, the adoption of these technologies also raises important challenges, including data protection, algorithmic transparency, academic integrity, ethical concerns, and the need for continuous professional development of legal educators.

The paper concludes that legal tech should be understood as a tool for enhancing, rather than replacing, traditional legal knowledge and critical legal thinking. Successful integration requires curriculum modernisation, interdisciplinary approaches, and institutional support for developing digital competencies among both students and faculty. The findings have significant implications for educational policy and practice, highlighting the need for responsible, ethical, and strategic implementation of digital technologies in legal education.

Keywords: *legal tech, legal education, artificial intelligence, digital transformation, educational policy*

Reflective Practice as a Predictor of the Professional Development of Preschool Teachers in Preschool Institutions

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Contemporary approaches to the professional development of preschool teachers are based on the understanding that reflective practice constitutes a key mechanism for continuous professional learning, competence development, and the enhancement of the quality of educational practice. In this context, the aim of this study was to examine the predictive role of reflective practice in the professional development of preschool teachers, as well as to analyse the contribution of professional collaboration and pedagogical documentation to this process. The study was conducted on a sample of 78 preschool teachers employed in preschool institutions in the Republic of Serbia, using a quantitative, non-experimental, correlational research design. Data were collected through a structured questionnaire and analysed using descriptive statistics and correlation and regression analyses. The findings indicate a statistically significant positive relationship between reflective practice and the professional development of preschool teachers. Reflective practice emerged as the strongest predictor of professional development, while professional collaboration made an additional significant contribution to this process. Pedagogical documentation plays an indirect role by supporting the development of reflective processes and enhancing the professional practice of preschool teachers. The findings also indicate that the professional development of preschool teachers is not determined solely by the length of work experience, but above all by the quality of reflective thinking, the level of professional collaboration, and continuous professional learning. This confirms the importance of reflective practice as a central factor in the development of professional competencies. The contribution of this study lies in the empirical confirmation of the role of reflective practice as a predictor of professional development and in advancing understanding of the relationships among reflective practice, professional collaboration, and pedagogical documentation. The findings may be used to improve the initial education of preschool teachers and professional development programmes, with the aim of fostering a reflective professional culture in preschool institutions.

Keywords: *reflective practice, professional development, preschool teachers, professional collaboration, pedagogical documentation*

Social Competencies of Preschool Children: Preschool Teachers' Attitudes Towards the Influence of the Family and Educational Practice

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The development of social competencies is one of the key goals of preschool education, and the preschool institution, in partnership with the family, plays an important role in encouraging the adoption of socially acceptable patterns of behaviour. Accordingly, the aim of this paper was to examine preschool teachers' attitudes towards the educational approaches they use to encourage children's prosocial behaviour, as well as their perceptions of the level of development of preschool children's social competencies and of the influence of the family environment on their formation. The research was conducted in spring 2026 on a sample of 63 preschool teachers. A questionnaire comprising 18 questions, 14 closed-ended and four open-ended, was constructed for the purposes of the study. The data were analysed using descriptive statistics, while responses to open-ended

questions were processed through qualitative analysis. The results show that preschool teachers observe significant differences in the level of development of social competencies among preschool children. According to their assessments, the family environment does not always provide stimulating conditions for the development of socially acceptable patterns of behaviour, whereas the project-based approach, cooperative learning and activities based on interaction among children contribute significantly to the development of empathy, cooperation, communication skills and other prosocial competencies. The role of play is particularly emphasised as a key pedagogical means for developing social relationships, constructive peer interaction and the acquisition of social experience. The findings point to the need for systematic strengthening of partnerships between the family and the preschool institution, as well as for the continuous improvement of educational practice through contemporary pedagogical approaches aimed at developing social competencies and preventing undesirable forms of behaviour in preschool children.

Keywords: *social competencies, prosocial behaviour, family environment, preschool teachers, play*

Gender Aspects of Teaching Physical and Health Education

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Physical and Health Education, as a compulsory subject in primary education in Serbia, is an important means of raising awareness of the importance of physical activity, maintaining fitness and adopting healthy lifestyle habits throughout life. Gender aspects of teaching Physical and Health Education comprise a range of activities through which the teaching process takes into account the needs and abilities of all pupils regardless of sex, so that, through inclusive teaching, both boys and girls have equal opportunities to develop their motor abilities and to participate actively in all subject content. Previous research points to marked differences between boys and girls in their choice of sports activities, as well as to a more pronounced sporting spirit among boys. The literature also attributes a more passive role in sports activities to girls, which may contribute to the development and persistence of gender stereotypes that need to be overcome in contemporary teaching. This paper is based on research conducted to examine differences between boys' and girls' attitudes towards Physical and Health Education. The study included 167 pupils from the fifth to the seventh grade of primary school. The results indicate the need for further development of a gender-sensitive approach both in curriculum design and in the delivery of lessons, in order to ensure equal opportunities for all pupils to participate in lessons and to develop their motor competencies.

Keywords: *Physical and Health Education, gender aspects, pupils' attitudes*

Where Science Meets Art: Creative Pathways to Understanding Ecology and Aquatic Ecosystems

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Teaching ecology and aquatic ecosystems remains a considerable challenge in biology education because ecological processes are complex, interconnected, and often difficult for students to visualise. Conventional instructional approaches frequently emphasise factual knowledge at the expense of inquiry, creativity, and systems thinking, limiting students' ability to develop a comprehensive understanding of environmental issues. In response to these challenges, the integration of science and art within the STEAM framework has emerged as a promising educational strategy for promoting ecological literacy, environmental responsibility, and twenty-first-century competencies. The aim of this paper is to present an interdisciplinary STEAM teaching model designed to enhance students' understanding of ecological principles and aquatic ecosystems through creative learning experiences. The proposed model integrates biological concepts with artistic practices, including scientific illustration, ecological storytelling, concept mapping, construction of ecosystem models from sustainable materials, digital visual design, and collaborative project-based learning. The methodology is based on the pedagogical design and qualitative analysis of classroom activities aligned with biology curriculum outcomes for primary and secondary education. The

instructional framework emphasises inquiry-based learning, experiential observation, collaborative problem-solving, and reflective practice. Evidence from contemporary educational research, supported by the pedagogical rationale underlying the proposed activities, indicates that the integration of artistic approaches into science education enhances student engagement, improves conceptual understanding of ecological interactions, strengthens knowledge retention, and promotes positive attitudes towards biodiversity conservation and sustainable development. The proposed model demonstrates that meaningful integration of science and art can transform the learning of ecology from passive knowledge acquisition into an active process of exploration, creativity, and critical reflection. These findings support the broader incorporation of interdisciplinary STEAM methodologies into biology education and highlight their potential to inform curriculum development, teacher professional development, and educational policies aimed at fostering scientifically literate and environmentally responsible citizens.

Keywords: *STEAM education, ecology education, aquatic ecosystems, biology teaching, interdisciplinary learning, environmental literacy*

Examining Performance Anxiety Components as a Basis for Improving Music Education

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Core manifestations of anxiety, such as fear, apprehension, and anticipating negative outcomes, frequently occur among musicians exposed to evaluation by audiences and experts, potentially impairing performance quality. Conducted on 66 Belgrade Faculty of Music students (64% female) from piano (34.8%), string (34.8%), and wind (30.4%) departments, this study examined music performance anxiety factors and gender/departmental differences. The Serbian translation of the Music Performance Anxiety Inventory for Adolescents: MPAI-A (15 items, five-point Likert scale) was administered as a self-assessment tool to examine three anxiety components. Results indicate low-to-moderate performance anxiety: wind department ($M = 1.45$, $SD = 1.11$), string department ($M = 2.19$, $SD = 1.15$), and piano department ($M = 2.26$, $SD = 1.03$). Pianists and string players scored significantly higher than wind players on physiological-emotional ($F(2, 63) = 3.47$, $p = .037$) and evaluative ($F(2, 63) = 3.49$, $p = .036$) components. Differences close to statistical significance were found between physiological-emotional and contextual components ($t(65) = 1.94$, $p = .057$), and between contextual and evaluative components ($t(65) = -1.92$, $p = .059$). Female students achieved significantly higher scores on physiological-emotional ($t(64) = -2.29$, $p = .026$) and contextual ($t(64) = -2.06$, $p = .043$) components. Gaining insight into this problem highlights directions for enhancing teaching practices and providing student support, thereby preventing academic failures caused by stage fright and fostering further musical development.

Keywords: *components of performance anxiety, instrumental departments, music student education, curricular and extracurricular support*

Project-Based Learning as a Method for Developing Students' Creative Potential

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The need to introduce research methods into curricular and extracurricular activities, increase student engagement, and overcome the shortcomings of traditional teaching has a long history. Project-Based Learning (PBL) is rooted in modern understandings of the child, instruction, the role of education, and learning as a social construct supported through collaborative action, utilising diverse information sources and activities. Although the benefits of this approach are multifaceted, examples from practice in this field remain limited. Therefore, the aim of this paper is two-fold: 1) to examine the theoretical foundations, characteristics, and phases of project-based learning, the roles of teachers and students, and potential implementation challenges; and 2) to present and evaluate a model of project-based learning implemented with sixth-grade primary school students – resulting in the project "Even the Gods Play the Bouzouki" – and to determine its effects. The first phase involved teaching the unit "Greece" through group tasks over two regular geography class periods, while the second

phase comprised the remaining planned activities carried out during extracurricular and club sessions of other subjects. The final outcome of the project was a theater play that was performed multiple times and received awards. The evaluation of this project-based learning model, conducted through the teacher's reflective approach and the analysis of the workflow and work products, indicates that integrating geographical concepts into a dramatic script, creating costumes and scenography, and selecting music and choreography for the performance enhanced students' creativity, creative thinking, and motivation. Substantial reform of the educational system in line with the needs of students and society requires higher motivation and greater teacher engagement in creating the necessary conditions to foster project-based learning. The school climate should be oriented towards supporting collaboration and teamwork among both teachers and students, as well as the adequate evaluation of creative processes and outcomes.

Keywords: *geography teaching, project-based learning, student creativity, motivation, collaboration*

Development of a Short Form of the Syntax Awareness Test: SOS-3F-SF

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Syntax awareness represents the ability to direct attention to the syntactic structure of an utterance, independent of its meaning, and is associated with reading acquisition and reading comprehension. The aim of this study was to develop a shorter form of the Syntax Awareness Test (SOS) while preserving its criterion validity, by reanalysing the data from the original validation study. The sample included 197 preschoolers (51% girls). Five items of the original SOS were excluded owing to maximum ease. The four-factor structure was supported by Horn's parallel analysis and the AM2019 criterion, while the MRFA parallel analysis suggested three factors, so both solutions were initially considered. Item reduction combined criterion correlations, content coverage, 2PL parametrisation, and local dependence indices. Through iterative item elimination, a three-factor solution emerged as the best fit (SOS-3F-SF; 76.3% of shared variance): F1 = grammatically incorrect sentences; F2 = temporal and spatial (non)synonymous pairs; F3 = grammatically correct sentences. F1 and F3 were most informative within the targeted logit range (79.0% and 78.0% of information, respectively), as was F2 (97.4%), with (very) high discrimination parameters. Correlations of the factors with the criterion – the average of nine teacher ratings of performance in the Serbian language, mathematics, and nature and society – were .48, .37 and .29, respectively; while relationships with intelligence were .65, .38 and .37. A regression model with the SOS-3F-SF factors and intelligence explained 37.7% of the criterion variance, with intelligence and F2 emerging as significant predictors. The SOS-3F-SF retains the criterion validity of the original test while offering a shorter, content-wise more optimal structure, and is recommended over the full form for use in research within the educational context.

Keywords: *Syntax Awareness Test (SOS), short form, factor analysis, criterion validity, educational context*

Developing the Competencies of School Staff for Recognising Student Mental Health Issues: An Analysis of the Effects of a Professional Development Programme

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The mental health of children and adolescents of school age has become one of the greatest health and pedagogical challenges of the 21st century. The contemporary social context – characterised by digitalisation, peer pressure, a heavy focus on high academic achievement, socially desirable professions that ensure financial gain, and parental expectations – drastically intensifies the vulnerability of young people. Although teachers play a primary role in noticing changes in student behaviour and emotional dysregulation, findings from numerous studies indicate that they often assess themselves as lacking the competencies needed to adequately recognise student mental health issues and provide support. This paper analyses the effects of an accredited professional development programme designed to strengthen the capacity of education professionals in this domain. The study was conducted using the method of focus group interviews with three groups of

participants (a total of 24 teachers and professional associates) from two primary and two secondary schools, three months after the completion of the professional development programme. The aim of the research was to examine the degree of empowerment among programme participants in the area of recognising mental health issues and student support strategies, analyse their experiences in applying the acquired knowledge, and identify obstacles in practice. Qualitative analysis of the transcripts revealed that participants report a high degree of empowerment for the timely recognition of issues (such as anxiety, depressive crises, and psychotic episodes) and the subsequent adequate guidance of students through the educational and healthcare systems. The leading obstacle in practice is the resistance of certain parents, which manifests as denial or minimisation of the child's recognised difficulties. The results of the study have practical implications for improving the implemented professional development programme, creating other forms of professional training (panel discussions, horizontal exchange), establishing an efficient prevention system within the school environment, and building trust in the educational system as a pillar of support for all aspects of student development.

Keywords: *student mental health, professional development, focus groups, prevention, schools*

DanceBridge Model: Active Learning through Music, Movement and Dance

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The contemporary educational process requires approaches that go beyond purely verbal and reproductive acquisition of content and involve pupils as active participants in learning. At the same time, there is a recognised need to strengthen motivation, cooperation, a sense of belonging and connections between different areas of learning. Music, movement and dance have considerable educational potential, yet they are often used as isolated activities and less frequently as structured pedagogical tools for achieving educational goals and outcomes. The aim of this paper is to present the DanceBridge Model, an original pedagogical model of active and experiential learning that links music, movement and dance with cross-curricular learning and the development of pupils' personal and social competencies. The model has been developed through many years of educational practice and the implementation of school, national and international projects: Creative Expression of Music, Movement and Dance; zaPLEŠI 8aš; zaPLEŠI MATURAnt; and Sing, Play, Dance... – What We Do Best. The methodological approach is based on reflective analysis of teaching practice, monitoring of activity implementation, observation of pupil participation and analysis of anonymous feedback from pupils and educational staff. Photographic and video documentation of the projects provides insight into the working process, pupils' active participation, and performance and collaborative outcomes. Current indicators point to high acceptance of the activities, increased motivation, a positive atmosphere, active participation and the development of collaborative relationships. The observed results confirm the pedagogical potential of the model and justify its further development and application. In conclusion, the DanceBridge Model provides a structured framework for active, experiential and cross-curricular learning and can contribute to more inclusive, creative and collaboration-oriented educational practice, as well as to the professional development of educational staff.

Keywords: *active learning, experiential learning, music, movement, dance*

Contemporary Challenges of Education in Theological Schools in Serbia

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Theological education in the Republic of Serbia is an important segment of the national education system and plays a significant role in preserving spiritual, cultural and educational heritage. Contemporary social, technological and educational trends call for the continuous improvement of curricula, teaching methods and the competencies of teachers and students, while preserving the identity and specific character of theological education. The aim of this paper is to analyse the contemporary challenges faced by secondary theological schools in Serbia and to consider opportunities for improving the quality of teaching in line with contemporary pedagogical standards. The research is based on a qualitative methodology and includes an analysis of current laws and bylaws, curricula and syllabi, relevant scholarly literature and strategic documents regulating

education. The results indicate that theological schools have considerable educational and formative potential, but that challenges exist in the digitalisation of teaching, the development of digital competencies, the use of innovative teaching methods and the strengthening of an interdisciplinary approach to learning. There is also a need for continuous professional development of teachers and for closer cooperation with higher education institutions and other educational institutions. It is concluded that improving the quality of theological education requires a balanced integration of traditional values with contemporary educational approaches. The findings may contribute to the development of educational policies and teaching practice in theological schools in the Republic of Serbia.

Keywords: *theological education, theological schools, quality of education, digital competencies, Republic of Serbia*

Building a Community of Practice Through the Development of a Space for Exploring Reclaimed Materials

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Contemporary approaches to professional development start from the understanding that professional learning does not take place exclusively through formal forms of training, but primarily through joint reflection on and inquiry into practice. From this standpoint, the paper presents the process of developing "Preplet – Centre for Education and Research of Reclaimed Materials" within the Preschool Institution "Dr Sima Milošević" in Zemun as an opportunity to build a community of practice among preschool teachers, pedagogical advisers and researchers. The paper presents a model of jointly designing the space, defining criteria for the selection of materials, reflecting on their pedagogical potential and planning future activities that become occasions for dialogue. Through dialogue structured in this way, the exchange of experiences and the re-examination of established professional beliefs of preschool teachers, advisers and researchers are reflected. Horizontal exchange designed in this way empowers the preschool teacher as a professional, who transfers knowledge from the Centre to their own kindergarten and, through exchange with colleagues, re-examines their practice and develops new perceptions that are reflected in the culture of the kindergarten. The focus of the paper is on understanding the process of co-creation itself as a form of professional learning, rather than on presenting a finished model of professional development for preschool teachers and advisers or evaluating its effects. The paper thus illustrates the potential of such initiatives, which strengthen cooperation between practitioners and researchers and help shape a community of practice aimed at improving the quality of educational practice.

Keywords: *centre for education and research of reclaimed materials, professional learning, community of practice*

From Reflective Dialogue to Professional Growth: Supporting Individual Competence within Professional Learning Communities

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In the context of a professional learning community in a preschool institution that is open to supporting the learning of each of its members, questions often arise: how to include everyone, how to provide additional motivation, what to choose, how to implement it, and what purpose our professional development serves. The continuous reflection of the professional development team, in cooperation with the pedagogical-psychological service, creates a pathway and a context that offer reflective dialogue and support for taking responsibility for one's own personal and professional development, with autonomy understood as a high level of responsibility. Analysis of staff needs, monitoring of work quality, exchange of examples of good practice and joint planning of activities ensure that professional development is directed towards real challenges in practice and the needs of the institution. Along a continuum that begins, several years ago, with a cross-section of challenges in the professional development process and extends to the present, when the effects of all strategies adopted to overcome these challenges are being reviewed, there stands a stable, motivated learning

community with established values as well as values towards which it strives and which it creates. Drawing on this experience, we describe a professional learning community that recognises change as an opportunity for development, nurtures a culture of continuous learning and bases its activities on shared responsibility for the quality of the educational process. The understanding that knowledge is created through cooperation, exchange and joint reflection ensures better support for the learning and development of every child, which is, in essence, the key point of professional development.

Keywords: *professional community, challenges, reflective dialogue, development*

Visibility of an Inclusive Kindergarten in the Process of Transition through Family and Kindergarten Partnership

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The transition model applied in our institution is based on an image of the child as competent to participate actively in the transition and in the creation of new relationships and roles. The focus is on the participation of the child and the family, on the child's experiences and on building partnerships among all participants in the transition, while respecting the principles of inclusiveness and democracy. Workshops organised for children and parents respond to parents' needs to be informed and involved, and to be asked what matters to them and to their children regarding kindergarten, as well as what they would like to learn about and experience there. Through the workshops, children and parents are gradually introduced to the life of the kindergarten, with the focus on relationships, participation and experience. At all levels of transition, children get to know the new environment together with people they trust: first their parents and then their preschool teachers. In this way, children have the opportunity to express their feelings and fears and receive individualised and personalised attention. By building a high-quality kindergarten community, removing boundaries between the nursery and the kindergarten, and building partnerships between nursery-age and kindergarten-age children, transition at this level proceeds without difficulty. The satisfaction and joy that children show during the transition process, in which they were consulted and respected, suggest that building high-quality partnerships among all participants in the transition is an important element of the successful inclusion of the child and the family in the school system.

Keywords: *transition, cooperation, inclusion, partnership, children's perspective*

Community Building in the "Hero Major Goran Savić" Facility

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The culture of this facility is based on a learning community and on peer learning across all age groups. Changes in our institution began with reflection on space as the "third teacher". In parallel, questions about changing the culture and structure of the kindergarten were raised. All these questions were addressed in cooperation with children and parents. Throughout the process of change, we relied on different perspectives, which gave us the experience of a community that learns through changes in practice. We initiated a process of building better relationships within the community, with the aim of developing partnerships among all its members. By involving parents, we took new joint steps in cooperation with families and began to furnish shared spaces with their help. Changes in the environment and peer learning brought us closer together and created opportunities to address other topics as well. Weekly meetings became our standard practice and were essential for resolving emerging uncertainties, problems and difficulties in the functioning of our community quickly and appropriately. In this way, both the culture and the structure of the institution changed: we became more open, children explore freely in shared spaces and move between rooms according to their interests, and the duty room has been replaced by shared spaces in the hall and the yard.

Keywords: *cooperation, inclusion, community, learning, play*

How Does Participation in the Learning Process Transform Participants and Educational Practice?

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In contemporary preschool education, transitioning from individual learning to learning within professional communities has become essential for authentic professional development. Through critical reflection and collaborative dialogue, participants co-construct shared knowledge, skills, and values that contribute to improving the quality of educational practice. This paper explores how practitioners' active engagement in a partnership-based project transforms the roles and professional identities of educators, children, parents, and professional associates. The study is grounded in reflective practice and practitioner research, focusing on identifying meaningful topics for inquiry, creating provocations, and formulating research questions. The findings indicate that learning is a multidirectional process of transformation in which changes in one participant stimulate changes in others. The paper highlights how these transformations influence the development of the curriculum and enhance the quality of educational practice. The presentation begins by contextualising horizontal learning exchanges within the preschool institution, focusing on meaningful topics, provocations, and research questions. The central section presents authentic learning situations from the perspectives of educators and professional associates, while examining their impact on children and families. The conclusion emphasises that collaborative learning, critical reflection, and the integration of new insights into everyday practice strengthen authentic partnerships with families, support practitioners' professional development, and improve educational quality. The paper demonstrates the dynamic relationship between theory and practice and underlines the importance of competent practitioners as agents of change within professional learning communities. Implications for educational policy suggest that institutionalising reflective practice through systematic action plans, horizontal exchanges and direct practice is vital for sustainable quality improvements.

Keywords: *reflective practice, professional identity, learning process*

Kindergarten Teacher Support in Developing Competences for Lifelong Learning

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The development of skills, abilities, and knowledge for lifelong learning begins in early childhood and is fostered through continuity in education. Preschool institutions play a significant role in laying the foundations for lifelong learning competencies, as they represent the first level of the educational system. This paper presents the authors' reflection on the support that preschool teachers provide to children in developing these competencies. Through examples of children's participation in various educational situations, the paper highlights the role of preschool teachers in encouraging the development of skills necessary for lifelong learning. The analysis shows that lifelong learning competencies are interconnected, overlap, and develop simultaneously. The presented examples demonstrate that, with adequate support and through active participation in meaningful situations, children can develop multiple competencies at the same time. Furthermore, the paper emphasises that the curriculum is built through the active participation of both children and adults.

Keywords: *lifelong learning, competencies, children's participation, active learning*

Building a Sustainable Future Through eTwinning and Erasmus+ Projects

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Contemporary ecological challenges and modern early childhood education require innovative approaches that foster a deeper emotional connection between children and nature. While traditional environmental education often focuses exclusively on cognitive knowledge, integrating mindfulness and food mindfulness activities offers a holistic path towards sustainable behaviour and the emotional well-being of both children and preschool teachers. This paper aims to present the results of the first

year of the Erasmus+ project “Aqua Mind”, which focuses on integrating mindfulness practices into environmental education, while highlighting the role of international professional development. The methodology comprises a qualitative analysis of the pedagogical activities implemented over the past year, together with an evaluation of the job-shadowing activities carried out within the Erasmus accreditation. These international observations gave preschool teachers direct insight into examples of good practice in mindfulness-based eco-pedagogy. The findings indicate that participation in the project and in mobilities to partner countries significantly improved preschool teachers’ competencies and self-confidence in implementing mindfulness and food mindfulness activities. The “Aqua Mind” project shows that combining environmental awareness with mindfulness creates a powerful synergy, effectively driven by international cooperation in Erasmus projects and by staff experiential learning.

Keywords: *Erasmus+, eTwinning, professional development, eco-pedagogy*

Ethics in Using Artificial Intelligence in Contemporary Education

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The rapid integration of generative Artificial Intelligence (AI) into the educational system has brought radical changes to teaching practices, alongside serious ethical and cognitive challenges. This paper analyses the phenomenon of the “AI vicious cycle” – a situation where teachers use AI to create teaching materials and assignments, while students use the same tools to generate answers and seminar papers. This practice results in student passivity and an overall “zero cognitive effect,” which renders the process of active learning meaningless.

The aim of this paper is to offer a theoretical framework and practical solutions for transforming AI from a tool for mechanical copying into an ethical, personalised “Socratic tutor” that encourages critical thinking. Through the concept of the “Golden Prompt,” the paper demystifies the application of maieutics (guided dialogue through questioning) in a digital environment, emphasising the importance of developing critical awareness in students when verifying information.

In the practical section of the paper, the implementation of the Mizou digital platform is presented as an example of successful synergy between technology and pedagogy. This tool allows teachers to maintain full control over the learning process by programming AI assistants that guide students through content without offering immediate solutions. The paper concludes by pointing to the inevitable evolution of the teacher's role in the school of the future from a traditional transmitter of factual information to a mentor, ethical compass, and architect of the modern cognitive process.

Keywords: *artificial intelligence, ethics, education, active learning*

Means for Improving the Quality of Primary Education

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Improving the quality of primary education is achieved through the modernisation of curricula, continuous professional development of teachers, evaluation of the quality of textbooks and teaching aids, as well as through the process of self-evaluation of school work. In current educational policies in our region, the system relies on learning outcomes and standards of achievement, which are given great importance as means of improving the quality of primary education. Learning outcomes express what the student should know, and achievement standards define the levels at which a certain outcome can be achieved. The aim of the study is to show the systematic structure (curriculum) on the basis of which the learning process is organised and the possibilities of improving the quality of the teaching process by creating learning outcomes and their operationalisation through achievement standards. With this aim in mind, a theoretical and conceptual analysis of the relevant literature and research findings was carried out. The results of the analysis indicate a number of desirable effects of education guided by defined outcomes and achievement standards. Learning outcomes make it possible to specify the activities of students and teachers, to monitor the learning process more effectively, to develop knowledge standards and, on that basis, to evaluate student achievement more objectively. Therefore, it is recommended that theorists and educational policy makers devote more

attention to the well-founded development of learning outcomes and the creation of different standards of achievement, as a means of improving the effects of teaching and the learning process.

Keywords: *teaching resources, quality of education, curriculum, learning outcomes, achievement standards*

Multimedia in English Language Teaching: Opportunities and Perspectives

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The rapid advancement of digital technology has profoundly transformed English language teaching (ELT), positioning multimedia as a central pedagogical resource. This paper examines the role of multimedia tools – including audio-visual materials, interactive software, digital storytelling, and web-based applications – in fostering language acquisition and enhancing learner engagement in higher education. Drawing on Mayer's Cognitive Theory of Multimedia Learning (2001) and Krashen's Input Hypothesis (1985), the study explores how multimedia stimulates multiple cognitive channels and supports both explicit and implicit learning. The paper presents findings from a small-scale exploratory study conducted at the Academy of Applied Studies Sirmium, Serbia, in which 62 students enrolled in English language courses were surveyed regarding their attitudes towards multimedia-enhanced instruction and its perceived impact on linguistic competence. Results indicate that students demonstrate significantly higher motivation and engagement when multimedia is integrated into lessons, particularly in listening comprehension, vocabulary acquisition, and speaking confidence. Key challenges – including uneven technological access, varying digital literacy, and curriculum alignment – are also identified. The paper concludes with evidence-based recommendations for effective multimedia integration in ELT at the tertiary level, contributing to the literature on Technology-Enhanced Language Learning (TELL) and carrying practical implications for educators and curriculum designers in professional and applied studies programmes.

Keywords: *multimedia, English language teaching, technology-enhanced language learning, cognitive theory, learner engagement*

Staff Readiness for Digital Accessibility in the Transition of Students with Disabilities

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Students with disabilities face a disproportionate risk of educational discontinuity at the critical juncture between secondary and higher education – a transition that remains insufficiently addressed in institutional policy and pedagogical practice across the Western Balkans. This paper examines the readiness of higher education staff to support the digital accessibility and inclusion needs of students with disabilities during this transition, briefly situating the study within the Erasmus+ HAWKING project (Harvesting Digital Alternation in Ways that Knock-down Inaccessibility of New Generations, No. 101128741), coordinated by the University of Montenegro, in which the Academy of Applied Studies Sirmium from Sremska Mitrovica participates as a Serbian partner. The study draws on the UN Convention on the Rights of Persons with Disabilities, the European Disability Strategy 2021–2030, and Universal Design for Learning. Empirical insights are drawn from semi-structured interviews with 12 academic and administrative staff at the Academy of Applied Studies Sirmium, exploring their attitudes towards inclusion and their self-perceived competence to work with students with disabilities. Findings reveal a generally supportive attitudinal disposition, combined with significant uncertainty regarding legal obligations, accommodation practice, and digital accessibility standards. Most participants reported having received no formal training in inclusive pedagogy or assistive technology use, and described feeling ill-equipped to support students through the secondary-to-higher education transition without institutional guidance. The paper proposes recommendations for mandatory staff training, institutional policy development, and investment in digital accessibility infrastructure, with implications for professional development and inter-institutional coordination.

Keywords: *disability, higher education, staff readiness, digital accessibility, inclusive education*

Inclusive Potential of Visual Art Activities in Preschool Education: A Review

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Inclusion of children with developmental difficulties represents one of the priority directions of contemporary preschool pedagogy, while the methodological potential of visual art education in supporting inclusive practice remains insufficiently systematised in the national and regional professional literature. The aim of this paper is to examine, through the analysis of relevant theoretical and empirical sources, the role of visual art activities as a means of fostering inclusive educational practice with children of preschool age. The method applied is theoretical analysis and synthesis of contemporary scientific and professional literature in the fields of art pedagogy, inclusive education, and early childhood developmental psychology. The findings indicate that visual art activities, owing to their non-verbal, process-oriented, and individualised character, represent a suitable medium for the participation of children with diverse developmental needs, fostering self-expression, social interaction, sensorimotor coordination, and the development of functional skills. The paper also identifies specific methodological procedures that educators may apply in order to adapt visual art activities to heterogeneous, inclusive groups. It is concluded that methodologically well-designed visual art education may serve as an effective instrument of inclusive practice in preschool institutions, with implications for the professional development of educators and the advancement of the visual art curriculum.

Keywords: *children, inclusive education, visual art*

Digital Tools in Preschool and Primary Art Education: Opportunities and Challenges

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The digital transformation of education raises important questions about the role of technology in domains traditionally grounded in sensory, tactile, and manipulative experience, such as visual arts education. While digital tools are increasingly present in preschools and primary schools, their pedagogically meaningful integration into art education remains insufficiently examined. The aim of this review paper is to synthesise recent research findings and examples of good practice concerning the use of digital tools in the visual arts education of preschool and primary school children, and to identify their potential benefits and limitations for the development of children's creative expression. The methodology is based on a review of relevant literature published between 2015 and 2025, complemented by an analysis of documented practice examples involving drawing and painting applications, interactive whiteboards, digital photography, stop-motion animation, and virtual museum visits. The findings indicate that digital tools can broaden children's expressive repertoire, increase motivation and engagement, support the inclusion of children with developmental difficulties, and facilitate the documentation and assessment of children's creative processes. At the same time, the literature highlights significant challenges: excessive screen time, the reduction of tactile and sensory experience, insufficient digital and methodological competences of teachers, and unequal access to equipment. It is concluded that digital tools should complement, rather than replace, traditional art techniques and materials. The implications for practice and policy include systematic professional development of teachers and clear pedagogical guidelines for age-appropriate, balanced integration of digital tools in art education.

Keywords: *art education, digital tools, creativity*

Risky Play in the Preschool Context – The Role of Preschool Teachers in Creating a Stimulating Environment for Play-Based Learning

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The contemporary approach to preschool education recognises the child as a competent being who learns through active participation, exploration, play and interaction with the environment. In this context, risky play is an important element in the development of children's independence, confidence, responsibility and functional competencies. The role of the preschool teacher is no longer focused exclusively on protecting the child from every risk, but on thoughtfully creating a stimulating environment in which children can explore, assess their own abilities, make decisions and develop self-confidence. The paper presents an example of a project to redesign a kindergarten yard by creating a "construction site" and making play furniture, in which children actively participated in planning, constructing, exploring materials and shaping the space. The use of real, natural and unstructured materials created an environment that encourages cooperation, creativity, exploratory behaviour and risky play. Particular emphasis is placed on the role of the preschool teacher as a reflective practitioner and agent of innovation who, through observation, documentation, critical reflection and cooperation with children and families, builds a high-quality environment for play-based learning.

Keywords: *risky play, play space, reflective practice, innovation in preschool education, children's competencies*

Reflective Practice and Action Research for Improving Educational Work

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The contemporary educational context requires educators and professional associates to become active researchers of their own practice to address complex pedagogical challenges. The context and significance of this work lie in the necessity to bridge the gap between theoretical frameworks and practical action through continuous reflection. The aim of the research is to examine the effects of implementing action research cycles on the quality of interaction within the educational group and the professional empowerment of educators and professional associates. Regarding methodology, the study is based on a qualitative approach using the action research model, which includes phases of planning, acting, observing, and reflecting. The sample comprises educators and professional associates (pedagogues and psychologists) who conducted research cycles focused on specific practical problems over one school year. Results indicate that systematic reflection leads to a deeper understanding of the educational process, modification of ineffective educational strategies, and strengthening of team collaboration. The conclusions confirm that action research serves as a powerful tool for professional development and the internal transformation of educational practice. Implications for practice suggest the necessity of institutional support for professional associates in leading research processes, ensuring sustainable quality improvement in preschool institutions.

Keywords: *reflective practice, action research, educator, professional associate, educational improvement*

Contemporary Practice Models in Support of Holistic Child and Family Development

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The contemporary institutional framework of preschool education emphasises the need for synergy between the professional community, the family, and the local and wider community. This paper presents a model for implementing and disseminating the results of the project "Launching and Promoting the Early Development Centre Service (Equipping the Premises and Implementing a Programme to Improve Approaches to the Promotion, Prevention and Protection of Children's Rights and Family Support Measures)". The project is supported by the Ministry of Family Welfare and

Demography of the Republic of Serbia and implemented by the humanitarian organisation “Graditelji mira” (Peacebuilders) in partnership with the Preschool Institution “Nata Veljković” in Kruševac. The primary focus of the project is on supporting the holistic development of the child in a stimulating environment, while strengthening parental competencies, improving intergenerational cooperation and promoting systemic family support measures. In addition to direct, structured educational work with children and parents through workshops, the key contribution of this work lies in an innovative approach to disseminating the process and the project results. A dedicated web platform was created that functions as an open knowledge base for parents, preschool teachers, pedagogical advisers and other practitioners. The sustainability and visibility of the model in the wider community of the Rasina District are ensured through a multimedia approach: media promotion and the creation of educational videos on YouTube. In this way, theoretical principles of integrated early childhood support have been successfully translated into a sustainable, digitally accessible and recognisable model of contemporary practice.

Keywords: *holistic development, family support, Early Development Centre, digital platform*

Clay Modelling in Preschool Education: Parent–Teacher Collaboration

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Partnership between the family and the preschool institution is one of the fundamental principles of contemporary early childhood education. In accordance with the principles of the real programme, joint activities involving children, parents, and preschool teachers contribute to the creation of a stimulating learning environment where learning takes place through play, exploration, collaboration, and shared creativity. A clay modelling workshop with children and parents represents an example of good practice that strengthens family–preschool partnerships and actively involves families in the educational process.

The aim of this paper is to present the importance of a joint clay modelling workshop as a form of cooperation between families and the preschool institution, as well as its contribution to children's learning, creativity, social skills, and sense of belonging to the preschool community. Through exploring the properties of clay and creating various objects together, children, parents, and preschool teachers exchanged ideas, experiences, and skills, while children learned through observation, experimentation, and active participation in the creative process.

The paper describes the planning and implementation of the workshop, observations of children's learning and development, and the experiences of both parents and preschool teachers. Particular attention is given to the role of such activities in strengthening mutual trust, fostering family–preschool partnerships, and creating a supportive learning community. It is concluded that workshops based on shared creative activities represent a valuable resource for improving the quality of educational practice and promoting partnership as a core principle of contemporary early childhood education.

Keywords: *clay, workshop, family–preschool partnership, real programme, children's creativity, learning through play*

Nulla dies sine linea: Documenting Practicum in Initial Preschool Teacher Education

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Documenting in initial preschool teacher education (IPTE) is constructed as a practice that contributes to its quality while simultaneously making this educational process more visible and vulnerable for documentors, readers and participants. Practicum is often claimed as a peculiarly important segment of the IPTE curriculum and an indispensable ‘wheel’ of preschool teachers' professional development. Therefore, in this paper the process of documenting practicum in IPTE is conceptualised and discussed from the theoretical lens of Engeström's activity theory and Maurizio Ferraris's concept of documentality. Different approaches accompanying two examples of documenting practicum in IPTE are presented and analysed. The approach to documenting practicum is not just an individual, private issue for every preschool teacher educator, preschool teacher and student but rather a joint ethical

choice and responsible decision based on knowledge about a wide range of different approaches to documenting practicum, rethinking, choosing and applying the appropriate approach. Recognising and discovering what is appropriate and possible in documenting a practicum in relation to the current culture and structure of the higher education institution, and then also in the preschool institutions in cooperation with which the practicum takes place, has the potential to change both the way of documenting, as well as the documented educational processes, the participants and documentors. That is why it is important to think thoroughly about how this process is set up, understood and carried out in order to contribute to the improvement of the quality of both initial preschool teacher education and preschool education.

Keywords: *documenting practicum, initial preschool teacher education, activity theory, documentality, theory–practice relationship*

Professional Competence in the Making: A Sociocultural Perspective on Preschool Teachers' Professional Learning

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Drawing on a sociocultural understanding of learning as participation in social practices, this paper conceptualises professional competence as an integrated capacity for professional action, constituted through the dynamic processes of negotiating meaning, developing professional identity, and cultivating a creative stance towards one's own practice. From this perspective, professional development is not based on the transfer of knowledge but on continuous professional learning that unfolds through participation in communities of practice, collaborative inquiry into practice, experimentation, engagement with authentic professional challenges, and reflective examination of pedagogical action. Such an understanding of professional competence is particularly relevant in educational contexts that require professionals to exercise creative judgement and embrace uncertainty, such as early childhood education. The paper explores possibilities for reconceptualising teachers' professional development, not as a series of discrete professional development activities, but as an integrated process of professional learning oriented towards the development of professional competence. The research was designed as a case study analysing a months-long professional learning programme involving preschool teachers and professional associates in an early childhood institution. The analysis focuses on key principles of organising professional learning through cycles of collaborative inquiry into practice, pedagogical documentation, reflective dialogue, and the co-construction of professional practice. The findings indicate that professional competence is neither a collection of predefined knowledge and skills nor an exclusively individual attribute; rather, it is constituted through sustained collaborative inquiry, reflective engagement, and the creative reconstruction of educational practice. The study highlights the need to redefine professional development as a continuous process of professional learning that enables educators to respond creatively, collaboratively, and thoughtfully to the complexity and uncertainty of contemporary educational practice.

Keywords: *professional competence, professional learning, sociocultural theory, collaborative inquiry, early childhood education*

02

2. DIGITAL TECHNOLOGIES, IT EDUCATION AND ARTIFICIAL INTELLIGENCE

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Book of Abstracts



Generative Artificial Intelligence and University Social Responsibility in Higher Education

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Generative artificial intelligence (AI) is rapidly entering higher education and raises questions about learning quality, institutional support, ethical use, and university social responsibility (USR). This study examines how higher education stakeholders perceive the adoption of generative AI and how these perceptions relate to responsible institutional support and the learning experience. The study is based on an ongoing quantitative survey ($n = 60$; 37 academic/administrative staff and 23 students). Preliminary results show that 90.0% agree generative AI is becoming widely used, 81.7% agree AI-related skills are important for graduates, and 78.3% agree that generative AI may create risks for academic ethics and integrity. Institutional readiness appears less consolidated: 53.3% agree their institution is prepared for AI integration. The findings imply the need for clear institutional guidelines, AI literacy training, and assessment practices that support responsible, student-centred use of generative AI.

Keywords: *generative artificial intelligence, university social responsibility, higher education, student perceptions, responsible AI adoption*

Digital Tools in Energy Planning and Simulator-Based Training: Potential AI Applications

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Contemporary education in the energy field requires the integration of theoretical knowledge with the analysis of complex systems and the consequences of different technical and strategic decisions. This paper examines the educational application of digital tools at two complementary levels. The first concerns long-term energy planning and is based on experience with the IAEA's MAED, ESST and FINPLAN tools, which support the development of energy demand scenarios, the initial assessment of energy supply options and the analysis of investment requirements and financial sustainability. The second concerns simulator-based education in nuclear energy and draws on experience with educational demonstrations using the IAEA iPWR simulator. Such demonstrations enable participants to observe plant behaviour during normal operation, transients and selected safety related scenarios, while linking theoretical concepts with the dynamic response of reactor systems. The paper compares the educational potential and limitations of these approaches, with particular emphasis on scenario-based learning, visualisation, active problem solving and systems thinking. It also considers the potential use of artificial intelligence as an external analytical layer for processing simulator generated training data, assessing acquired competencies, identifying areas requiring further improvement and providing personalised feedback. The integration of digital tools, simulator-based learning and responsibly applied artificial intelligence can support the development of professional competencies in the energy field, while complementing rather than replacing the role of teachers and expert instructors.

Keywords: *digital tools, energy education, simulator-based training, nuclear energy, artificial intelligence*

Digital Competences and Educational Limitations in the Context of Smart Tourism

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The rapid development of digitalisation, artificial intelligence, and advanced technologies has significantly transformed professions and created a growing demand for the development of new competencies. In this context, smart tourism represents an example of a digitally driven sector that increasingly relies on information and communication technologies, digital platforms, and technology-mediated communication. These developments raise the question of whether existing educational models are adequately aligned with current technological trends. The paper is based on the

assumption that a certain mismatch exists between the pace of digital technological development and the capacity of educational systems to adequately respond to the demands of the contemporary professional environment. It aims to examine the importance of developing digital and communication competencies within the context of smart tourism, with particular emphasis on educational limitations and the need for innovative learning approaches and continuous professional development. The study adopts an interdisciplinary approach and is based on a qualitative analysis of relevant scholarly literature in the fields of digitalisation, advanced technologies, education, and tourism. It is grounded in the premise that the contemporary digital environment requires the development of competencies that extend beyond traditional educational frameworks, including digital literacy, a critical approach to the use of technology, and advanced communication skills. The findings highlight the need for more flexible and comprehensive educational models that are better aligned with ongoing technological advancements and emerging development opportunities.

Keywords: *digital competencies, digitalisation, advanced technologies, smart tourism, education*

The Impact of Digitalisation on the Efficiency of the Controlling System

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The controlling system is established to support management in achieving set objectives by providing relevant, timely and reliable information for business decision-making. Today, management faces accelerated market changes that require faster and better decision-making. The digitalisation of business processes brings additional challenges: it enables the analysis of ever-larger volumes of data in real time using modern information technologies, but at the same time requires continuous improvement of employees' knowledge and skills. Under such conditions, controlling plays an increasingly important role in supporting management in managing business performance and achieving competitive advantage. The aim of this paper is to analyse the impact of digitalisation on the efficiency of the controlling system and to examine the changes that digital transformation brings to the work of controllers and to corporate management processes. The paper starts from the assumption that digitalisation improves the quality of information, increases the speed of data processing and enables a more efficient response to changes in a dynamic business environment. The use of digital technologies enables the automation of routine controlling activities. This frees controllers' time to master new analytical tools for planning, controlling and forecasting business results, while achieving greater integration of information flows within the company. Particular attention is paid to the importance of human resources and management's readiness to carry out digital transformation. The success of implementing digital technologies in controlling depends on organisational support, the continuous development of employees' digital competencies and adequate financial resources. Professional knowledge of accounting and finance remains necessary but is no longer sufficient. Digitalisation transforms the traditional role of the controller, expanding their skills and redefining the way they contribute to the company's business. Controlling thus becomes a key factor in improving the efficiency, transparency and quality of management, contributing to the long-term sustainability and competitiveness of the company.

Keywords: *digitalisation, controlling, controller, planning, data processing*

Irredentism and Digital Modernism: Great-State Projects in Virtual Space

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Contemporary technologies have fundamentally transformed the ways in which individuals, social groups, and society as a whole exchange, receive, and interpret information. Digital platforms and the digitalisation of the communication sphere exert significant influence on the construction of collective identities, historical interpretations, and political attitudes, while simultaneously providing space for the promotion of irredentist and extremist narratives. This paper examines how great-state projects are promoted and disseminated through virtual space.

Keywords: *irredentism, symbolic contestation, digital media, extremism, digital literacy*

Fast RSA-Type Blind Signature Scheme Implementation and Simulation

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This paper presents some basic concepts of the Blind Signature technique, which is an extension of digital signatures. This technique allows the signer to sign a message received from the sender without insight into its content and forward it to the receiver. The blindly signed message can be checked for authenticity by the receiver, after removing the blinding factor. The simulation model shown in this paper is implemented in the CrypTool2 programming tool, and some improvements are also proposed in terms of verifying the authenticity of the message using the SHA hash function. The proposed simulation model is used in practical courses for the subjects Cryptography and Discrete Mathematics at the School of Electrical and Computer Engineering in Belgrade.

Keywords: *digital signature, RSA algorithm, blind signature scheme, CrypTool*

Mathematical Optimisation of Small-Person Detection in Surveillance via Image Tiling

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The detection of distant individuals in video surveillance systems is hindered by the fact that the object occupies a very small number of pixels in the image, causing it to fall below the detector's resolution threshold during standard input scaling. The objective of this paper is to mathematically formalise and optimise the processing pipeline for small person detection, built around the single-class, single-stage YOLOX-M detector (Ge, Liu, Wang, Li, & Sun, 2021). The methodology includes deriving the scaling laws of effective resolution during image slicing into tiles (SAHI), a formal analysis of Weighted Boxes Fusion (WBF) as a minimum-variance position estimator, the introduction of contained bounding box suppression using the Intersection over Smaller area (IoS) metric, and a computational complexity analysis as a function of the slicing geometry. Analytical expressions are derived for the number of tiles, the optimal overlap as a function of object size, and the expected gain in recall. Empirical evaluation on a real-world video surveillance dataset, using the YOLO11m detector (Jocher & Qiu, 2024) as a reference benchmark, demonstrates that the optimised processing pipeline increases the average precision for small objects (APs) from 0.369 to 0.597 (a relative gain of over 61%) and the recall for small objects (ARs) from 0.526 to 0.745, while raising the overall mAP@50:95 from 0.644 to 0.695. The results provide actionable system tuning guidelines and offer immediate value in teaching optimisation and computer vision.

Keywords: *small object detection, image slicing, weighted boxes fusion, optimisation, video surveillance*

Deep Learning-Based Intelligent Alarm Systems and Human Detection on Private Property

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Traditional alarm systems for private property protection rely on passive infrared (PIR) sensors, magnetic contacts, and glass break sensors, which react to any change in the scene and consequently produce a high rate of false alarms. The aim of this paper is to present, describe, and empirically evaluate the architecture of an intelligent alarm system in which the alarm decision is made only after visual confirmation of human presence using a detector based on deep convolutional neural networks. A single-stage YOLOX-M detector, trained exclusively for the "human" class, was used as the methodological baseline and integrated into a unified image processing pipeline that includes contrast enhancement, image slicing (tiling) for small object detection, and the merging of overlapping detections. The system was evaluated on a heterogeneous dataset of surveillance camera images, using the YOLO11m detector as a reference benchmark due to its ability to detect

small objects missed by human annotators. The complete processing pipeline increased the mean average precision from $mAP@50:95 = 0.644$ to 0.695, and the mean average precision for small objects from 0.369 to 0.597, with recall rising from 0.672 to 0.877 and the F1-score from 0.775 to 0.853. It is concluded that the hybrid approach, where a sensor triggers and a neural network confirms the alarm, represents a practical and economically viable solution for private property protection, with direct implications for engineering education in the field of applied artificial intelligence.

Keywords: *human detection, alarm systems, deep learning, video surveillance, small object detection*

Artificial Intelligence in Early Childhood Teacher Education: Prelingual Speech Development Analysis

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Generative artificial intelligence in higher education opens up new opportunities for improving the teaching process, particularly in specific fields such as the education of vocational nurse-preschool teachers, where practical skills are of particular importance. This paper aims to explore the possibilities of using generative artificial intelligence as a teaching assistant in practical classes in the course Speech Development in Early Childhood. The research was conducted through a comparative analysis of two audio recordings of a child's speech, lasting 29 seconds (recording 1) and 72 seconds (recording 2). The recordings were first analysed by two leading generative AI models, ChatGPT and Gemini. They were then analysed by a speech and language therapist, who identified the key deficits in the child's speech development. The results show a high degree of agreement between the generative AI models and the speech therapist's assessment in detecting basic aspects of speech, although the models differed in the depth of their analysis. ChatGPT showed greater precision than Gemini in structuring feedback, while Claude, another leading generative AI model, was not able to analyse audio recordings. It is concluded that, although generative AI models cannot replace the expertise of a speech therapist, they have high potential to act as reliable digital assistants that speed up evaluation and the preparation of teaching materials, and can be of great help to teachers. The implications for educational practice lie in the possibility of modernising the curriculum and reducing teachers' workload, while at the level of educational policy the paper points to the need to define guidelines for the ethical and effective integration of generative AI tools into higher education.

Keywords: *generative artificial intelligence, ChatGPT, Gemini, speech development, prelingual stage*

Teachers' Readiness for Artificial Intelligence Integration in Education: Evidence from Serbia

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The aim of this study was to examine teachers' readiness for artificial intelligence integration in education and to identify the factors influencing their intention to use AI tools in teaching. The study was conducted on a sample of 120 secondary school teachers from different regions of Serbia using an adapted version of the Teachers' Attitudes towards Artificial Intelligence (TAAI) scale. The results indicate high levels of perceived usefulness of AI ($M = 4.42$), intention to use AI tools ($M = 4.47$), and perceived pedagogical impact ($M = 4.29$). Self-efficacy showed significantly lower scores ($M = 3.17$), suggesting that many teachers still lack confidence in their ability to effectively use AI technologies. Correlation and regression analyses revealed that self-efficacy is a significant predictor of intention to use AI and perceived pedagogical impact, while anxiety showed no significant predictive effect. The findings highlight the importance of developing AI-related competencies through professional development programmes and institutional support.

Keywords: *artificial intelligence, teachers, self-efficacy, technology acceptance model, educational innovation*

Application of Predictive Maintenance Technologies in Technical Higher Education for Industry 4.0

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The development of Industry 4.0 and the rapid digitalisation of industrial systems have created a need for new approaches to educating future professionals in technical disciplines. Modern industrial systems increasingly rely on predictive maintenance technologies based on sensor networks, information and communication technologies (ICT), data analytics, and artificial intelligence. Consequently, higher education institutions must equip students with the competencies required to understand and apply these technologies in contemporary industrial environments. The aim of this paper is to analyse the implementation of predictive maintenance technologies in higher education for technical disciplines and their contribution to the development of students' digital, technical, and interdisciplinary competencies in the context of Industry 4.0. The methodology is based on a review of relevant scientific and professional literature, analysis of the requirements of modern industrial systems, and examination of opportunities for integrating predictive maintenance into higher education curricula through project-based learning, laboratory exercises, and digital educational technologies. The findings indicate that integrating predictive maintenance into the educational process enhances students' competencies in data analysis, information technologies, condition monitoring of technical systems, and data-driven decision-making. It also strengthens the connection between theoretical knowledge and industrial practice while encouraging collaboration between higher education institutions and industry. The paper concludes that predictive maintenance technologies are a valuable resource for modernising technical higher education and preparing students for digitally transformed workplaces. The implications for educational practice include curriculum modernisation, interdisciplinary study programmes, and stronger integration of industrial technologies into teaching and learning.

Keywords: *predictive maintenance, higher education, technical fields, Industry 4.0, digital competencies, artificial intelligence*

Generative Artificial Intelligence as a Reflective Partner in Toddler Theme Development

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In recent years, the development of generative artificial intelligence has opened up new possibilities for its use in education, yet its role in preschool education, especially in work with toddlers, remains insufficiently explored. Previous research has mainly focused on the use of AI in preparing teaching materials, personalising learning and developing digital competencies, while less attention has been paid to its potential to support preschool teachers' professional reflection. Drawing on the Preschool Curriculum Framework "Years of Ascent", the Strategy for the Joint Development of the Programme in Line with the Specific Features of Individual Age Groups, the Guide for Developing a Theme/Project with Children and the Guide for Arranging the Kindergarten Environment, the aim of the paper is to propose a conceptual model for using generative artificial intelligence as a reflective partner of the preschool teacher in the cycle of developing a theme/project with toddlers. The paper is conceived as a conceptual, theoretical study based on a qualitative analysis of curriculum documents and contemporary scholarly literature on the use of generative artificial intelligence in education. On the basis of this analysis, a model was developed that integrates the key phases of developing the real programme: observing children, pedagogical documentation, professional reflection, theme development, organisation of the environment and continuous re-examination of educational practice. The proposed model starts from the position that generative artificial intelligence cannot replace the preschool teacher's professional judgement, but can contribute to the analysis of pedagogical documentation, the recognition of different perspectives, the formulation of reflective questions and the generation of possible directions for further development of the theme/project. The contribution of the paper lies in the conceptualisation of the model "AI as the preschool teacher's reflective partner",

which positions generative artificial intelligence as support for professional reflection rather than as a means of automating pedagogical decision-making, thereby broadening the understanding of its role in developing the real preschool curriculum.

Keywords: *generative artificial intelligence, reflective practice, preschool teacher, theme/project, toddlers*

Recognising Early Mathematical Giftedness in Preschool Education: An Observation-Based Digital Framework

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Although high mathematical abilities may become clearly differentiated at an early age, recognising mathematical giftedness in preschool education remains a demanding task. Children's advanced mathematical potential is rarely expressed through formal achievement alone. It is more often visible in the ways children notice patterns, compare quantities, organise spatial relations, explain their thinking, and remain engaged in challenging problem-solving situations. Early recognition enables educators to respond in a timely manner and support the development of these emerging abilities. The aim of this paper is to propose a framework for recognising early indicators of mathematical giftedness through systematic observation, digital tools, and pedagogical documentation. The paper is based on a qualitative, practice-oriented approach and draws on the analysis of mathematical activities designed for preschool children in ScratchJr and GeoGebra. The analysis focuses on children's responses to open-ended tasks, their strategies, verbal explanations, error correction, and attempts to create more complex solutions. Observation notes, children's products, and reflective pedagogical records are used to interpret early mathematical thinking. The findings indicate that early mathematical giftedness can be recognised through rapid pattern recognition, flexible strategy use, spatial reasoning, early generalisation, persistence, and interest in demanding tasks. Digital tools proved useful because they made children's thinking more visible and easier to document. The paper concludes that recognising mathematical giftedness should be understood as an ongoing pedagogical process. The proposed framework may support systematic observation and responsive educational practice in early childhood education.

Keywords: *mathematical giftedness, preschool education, digital tools, pedagogical documentation, early identification*

Integrating Generative Artificial Intelligence into Computer Graphics Education: A Pedagogical Framework

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The rapid development of generative artificial intelligence is transforming digital visual production and reshaping the way computer graphics can be taught in higher education. This paper examines the integration of generative AI into computer graphics education, with the aim of proposing a pedagogical framework that supports innovation while preserving foundational graphic competencies. The study is based on a narrative literature review and pedagogical synthesis of selected scientific papers, conference contributions and technical documentation related to diffusion models, Neural Radiance Fields, Gaussian Splatting, text-to-3D generation and AI-supported professional tools, with particular attention to Adobe Photoshop functionalities such as Generative Fill, Generative Expand and Remove Tool. The analysis shows that generative AI can accelerate concept development, iterative visual exploration and structured comparison between manual and AI-assisted workflows. However, these tools do not replace the need for understanding raster and vector graphics, colour theory, resolution, selections, masks, layers, compositing, 3D modelling and visual evaluation. Current AI-generated 3D outputs still require significant manual correction, while issues of copyright, data provenance, academic integrity and superficial learning demand clear institutional and instructional guidance. Based on these findings, the paper proposes a seven-principle pedagogical framework for responsible AI integration, combining classical graphics instruction, AI-assisted activities, documentation of prompts and processes, critical analysis of generated outputs and

transparent rules for academic integrity. The framework offers educators a practical model for modernising computer graphics curricula without reducing the importance of technical knowledge, creative control and critical visual judgement.

Keywords: *generative artificial intelligence, computer graphics education, diffusion models, pedagogical framework, academic integrity*

Clustering Performance Analysis: A Comparative Study Between a Custom Platform and WEKA

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This paper evaluates clustering performance using the SimpleKMeans algorithm in two machine learning environments: a custom-built platform and WEKA. The study examines clustering quality using metrics such as inertia and silhouette score, as well as computational efficiency. Experimental results reveal that both systems produce comparable clustering structures, while the custom platform provides enhanced visualisation and parameter tuning capabilities. The findings emphasise the importance of user interaction in unsupervised learning workflows.

Keywords: *clustering comparison, k-means, WEKA, unsupervised learning, silhouette score, performance analysis*

Comparative Evaluation of Classification Algorithms in a Custom ML Platform and WEKA

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This study compares the implementation and performance of classification algorithms, including Naive Bayes and K-Nearest Neighbors, in a custom machine learning platform and the WEKA environment. The evaluation includes accuracy, precision, recall, F1 score, and execution time across multiple benchmark datasets. The results demonstrate that while WEKA provides robust baseline implementations, the custom platform offers improved flexibility and interactive capabilities. The paper discusses trade-offs in system design and their implications for research and practical applications.

Keywords: *classification comparison, naive Bayes, k-nearest neighbours, WEKA, evaluation metrics, machine learning systems*

From Digital Innovation to Social Responsibility: Artificial Intelligence in Modern Education

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Integrating artificial intelligence (AI) tools into higher education fundamentally changes students' learning, research, and academic work. This study analyses how students at higher education institutions in the Republic of Serbia perceive and use AI tools, and determines the factors influencing their acceptance. The empirical research was conducted on a sample of 120 students from several higher education institutions across the Republic of Serbia. The results show an exceptionally high level of acceptance, alongside a positive perception of both the usefulness and ease of use of AI tools. The Kruskal–Wallis test showed no significant differences in student attitudes with respect to gender, age or level of study, except for ethical awareness, where students from the Faculty of Hotel Management and Tourism in Vrnjačka Banja showed significantly higher risk awareness than students from other institutions. Multiple regression analysis identified strong positive predictors of students' willingness to apply AI tools, with risk awareness acting as a regulatory mechanism for responsible usage. Theoretically, the work contributes to understanding of how ethical awareness and social factors influence the adoption of AI technologies within the specific academic context of the Republic of Serbia. Practically, the findings offer valuable guidelines for higher education institutions

to establish ethical frameworks, adapt study programmes, and educate students on the responsible use of artificial intelligence.

Keywords: *artificial intelligence, higher education, Republic of Serbia*

A Didactic Model of Analogue-to-Digital Conversion for Teaching Digital Electronics and Microcontroller Systems

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This paper presents a didactic model of analogue-to-digital (A/D) conversion, developed in response to a gap the authors identified in the reviewed literature and in their own teaching practice: although the theory of A/D conversion is well established, a unified numerical example that traces all three conversion steps – sampling, quantisation, and binary encoding – for a single concrete signal, from the analogue value to the final binary record, is lacking. The methodology is analytical: a daily air-temperature profile (0–24 h, range 16–42 °C, a realistic summer daily range) is digitised using a sampling period of 1 h, a quantisation step of 2 °C, and 4-bit binary encoding, with an explicitly defined rule for the boundary case of quantisation. The trade-off between resolution (number of bits), maximum quantisation error, and the volume of generated data is analysed for several quantisation steps. The results show that the maximum quantisation error equals half the quantisation step, that doubling the number of levels simultaneously halves the error and increases the data volume, and that the presented example addresses two misconceptions the authors frequently observe among students: conflating the nature of sampling and quantisation errors, and the belief that a higher number of resolution bits automatically means a better measurement, without considering the resulting increase in data volume. It is concluded that such a numerical example can facilitate the teaching of A/D conversion in courses on digital electronics and microcontroller systems.

Keywords: *analogue-to-digital conversion, sampling, quantisation, binary encoding, quantisation error, microcontrollers*

Generative Artificial Intelligence and Student Creativity: Opportunities, Challenges and Educational Implications

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Generative artificial intelligence has become part of the higher education process, as students increasingly use it to support idea generation, problem solving, content creation, and various learning activities. Its wide application raises the question of whether such tools really encourage students' creativity or gradually replace their independent cognitive and creative effort. The goal of this paper is to review the potential of generative artificial intelligence for encouraging students' creativity, while also identifying the key risks associated with its uncritical or excessive use. A review and analysis of contemporary literature shows that generative AI can contribute to divergent thinking, broadening perspectives, providing ideas, and overcoming initial creative blocks. However, if students rely heavily on AI-generated suggestions, this can lead to creative fixation, inhibition of creative and cognitive processes, homogenisation of ideas, and reduced independent engagement in the creative process. The educational value of generative AI depends more on how students use it in learning activities than on the technology itself. Based on the reviewed literature, the paper proposes that AI should be viewed as a creative tool rather than as a substitute for students' own thinking, emphasising the role of teachers in designing tasks that encourage original idea generation, critical evaluation of AI content, reflection, and responsible use. These implications can contribute to the development of teaching practices that integrate AI while preserving and developing human creativity.

Keywords: *generative artificial intelligence, student creativity, higher education, creative thinking, AI-assisted learning*

Preschool Mathematical Reasoning in GeoGebra: A Multi-Case Analysis of Child Engagement

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Although GeoGebra has been widely examined in school and university mathematics education, its potential as an interactive learning environment in preschool settings remains underexplored. This study investigates how GeoGebra-based activities can support early mathematical learning through a qualitative retrospective multi-case secondary analysis of five practice-based master's studies conducted in Serbian preschool contexts. The analysis focuses on four dimensions: the design features of GeoGebra activities, forms of child engagement, manifestations of emergent mathematical reasoning, and pedagogical conditions for meaningful implementation. The analysed activities addressed concepts such as balance, measurement, comparison, classification, needs and wants, and integrated project-based learning. The findings suggest that age-appropriate GeoGebra activities, when designed around direct manipulation, immediate visual feedback, and meaningful problem situations, may encourage curiosity, persistence, collaboration, verbalisation, and early forms of mathematical reasoning. Children's interactions with these activities revealed processes of comparing, classifying, predicting, testing, and explaining relationships. At the same time, the analysis indicates that the educational value of GeoGebra depends not only on its technological affordances, but also on the quality of task design, teacher mediation, and institutional readiness for technology-supported learning. The study contributes to research on interactive learning environments by extending the discussion of GeoGebra to preschool education and by proposing a framework for understanding how dynamic digital activities may support early mathematical learning.

Keywords: *GeoGebra, interactive learning environments, mathematical reasoning, preschool education*

Modern Approaches to Digital Security and Data Protection

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Digital security represents one of the key challenges of modern society due to the increasing dependence on information technologies and digital communication. The aim of this paper is to analyse the basic concepts of digital security, identify the most common threats, and present accessible data protection methods available to a wide range of users. The paper examines phishing attacks, malware, ransomware, weak passwords, and risks associated with unsecured networks. Particular emphasis is placed on practical and affordable protection measures such as strong and unique passwords, multi-factor authentication (MFA), regular software updates, VPN technology, and regular data backup. In addition, the paper highlights the importance of education and digital hygiene as essential elements of effective protection. Digital security should be viewed as an important component of modern digital literacy.

Keywords: *digital security, data protection, cybersecurity, cyber threats, multi-factor authentication*

Artificial Intelligence in SME Creditworthiness Assessment: Benefits, Risks and Ethical Challenges

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The use of artificial intelligence (AI) is bringing changes to banking institutions, particularly in the creditworthiness assessment of small and medium-sized enterprises (SMEs). Traditional creditworthiness assessment models are based on the analysis of historical credit data, multi-year financial statements and collateral requirements. These traditional methods often disadvantage SMEs because they usually lack a sufficiently long credit history or adequate financial statements. The aim of this paper is to highlight the potential of AI in the creditworthiness assessment of SMEs. AI enables

the use of additional data sources and the analysis of historical behavioural patterns, which can enable lending to more companies. Machine learning models can improve credit risk assessment, increase access to finance for SMEs, and reduce credit risk, particularly in situations where the availability of traditional data is limited. Alongside the application of AI, human oversight should remain an integral part of the decision-making process in order to ensure the transparency of credit decisions.

Keywords: *artificial intelligence, banking, SMEs, creditworthiness assessment, machine learning*

Multidimensional Analysis of Students' Attitudes Towards the Use of LLM Tools in Education

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Large Language Models (LLMs) have become an important component of the contemporary learning process in higher education. Their increasing adoption raises questions regarding their educational benefits, potential risks and their impact on traditional teaching practices. The aim of this study was to provide a comprehensive analysis of students' attitudes towards the use of LLM tools by examining three research constructs: perceived educational usefulness, perceived risks and the perceived reduced role of traditional teaching. The study also investigated the relationships among these constructs, their association with the frequency and duration of LLM tool usage, and the differences between students enrolled in academic and professional higher education programmes. The research was conducted using a survey method on a sample of 132 students selected through stratified sampling, ensuring equal representation of students from academic and professional study programmes. The results indicate that ChatGPT is the most frequently used LLM tool, followed by Gemini and Claude, while approximately two-thirds of the respondents use LLM tools either daily or several times a week. Students largely recognise the educational benefits of LLM tools and, at the same time, acknowledge their potential risks, whereas they are considerably less likely to perceive these tools as diminishing the role of traditional teaching. A statistically significant positive relationship was found between perceived educational usefulness and the perceived reduced role of traditional teaching, while perceived risks showed no significant association with the other two constructs. The frequency and duration of LLM tool usage were positively associated with perceived educational usefulness and the perceived reduced role of traditional teaching, but not with perceived risks, except for the perception of dependency. Furthermore, no statistically significant differences were found between students enrolled in academic and professional study programmes. The findings contribute to a better understanding of students' attitudes towards the use of LLM tools and may serve as a basis for their more effective integration into higher education teaching and learning processes.

Keywords: *large language models (LLMs), LLM-supported learning, higher education, educational usefulness of LLM tools, perceived risks of LLM tools*

The Impact of Generative Artificial Intelligence on Project Management Performance

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The rapid advancement of Generative Artificial Intelligence is reshaping project management practices across a wide range of industries. Unlike conventional digital tools, Generative Artificial Intelligence technologies can generate project documentation, analytical reports, recommendations, and actionable insights, thereby assisting project managers in addressing complex managerial and operational challenges. This paper aims to explore the impact of Generative AI on project management performance through a content analysis of recent scientific literature. The study focuses on key application areas of Generative Artificial Intelligence, including resource planning, budget forecasting, risk management, stakeholder communication, project reporting, and performance monitoring. The findings suggest that the adoption of Generative AI can enhance project efficiency, reduce administrative burdens, strengthen decision-support capabilities, and accelerate information processing. Nevertheless, several implementation challenges remain, including concerns related to

data quality, transparency, ethical considerations, and the reliability of AI-generated outputs, all of which may influence the effectiveness of project-related decisions. In addition, excessive reliance on AI systems may weaken critical managerial judgement and raise issues concerning accountability, privacy, and governance within complex project environments. The study concludes that Generative AI has considerable potential to improve project management performance when integrated within appropriate governance frameworks and complemented by human expertise. By synthesising recent academic findings, this paper contributes to the expanding body of knowledge on digital transformation in project management and provides practical insights for managers seeking to leverage Generative AI in project settings.

Keywords: *artificial intelligence, projects, success, limitations*

Artificial Intelligence in Early Childhood Education: Opportunities and Challenges

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The rapid development of artificial intelligence (AI) has created new opportunities for improving the quality of early childhood education while simultaneously raising numerous pedagogical, ethical, and professional challenges. Contemporary AI-based systems enable the personalisation of learning processes, support the planning and documentation of educational practice, facilitate the development of teaching materials, enhance communication with families, and contribute to the development of preschool teachers' digital competencies. At the same time, their implementation requires a responsible approach that ensures the protection of children's privacy, preserves teachers' professional autonomy, and promotes the critical evaluation of AI-generated content. The aim of this paper is to analyse the opportunities and challenges of implementing artificial intelligence in early childhood education through a review of relevant national and international scientific and professional literature, with particular emphasis on its role in enhancing preschool teachers' professional practice. The paper examines the potential of artificial intelligence in planning and implementing educational activities, personalising learning, monitoring and documenting children's development, developing teaching materials, and supporting teachers' professional development, as well as the ethical, safety, and pedagogical challenges associated with its application. The review and analysis of contemporary research indicate that artificial intelligence can provide significant support for improving the quality of early childhood education when implemented in accordance with sound pedagogical principles and supported by well-developed digital and AI competencies among preschool teachers. Current evidence confirms that artificial intelligence cannot replace the professional role of the preschool teacher or direct interactions with children. Rather, it should be viewed as a tool that enhances the planning, organisation, and evaluation of educational practice. It is concluded that the responsible and ethically grounded integration of artificial intelligence can contribute to the development of contemporary early childhood education, provided that technology remains focused on promoting children's well-being and supporting the professional practice of preschool teachers.

Keywords: *artificial intelligence, early childhood education, preschool teacher, digital competencies, professional practice, ethics*

Vibe Coding for STEM Learning among Preschool Teacher Students

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The rapid evolution of artificial intelligence has introduced innovative approaches to educational software development, enabling educators with limited programming experience to create interactive digital learning resources. This study investigates the implementation of vibe coding – an AI-assisted software development methodology based on natural language prompting – for designing gamified STEM learning materials for preschool teacher students. The research aimed to evaluate whether vibe coding can facilitate the rapid development of educational games while enhancing students' engagement, creativity, and understanding of STEM concepts relevant to early childhood education. A quasi-experimental design was conducted with undergraduate preschool teacher students who

participated in workshops focused on AI-assisted game development using large language models and no-code/low-code development environments. Participants collaboratively designed, implemented, and evaluated a series of gamified STEM activities integrating mathematics, science, engineering, and computational thinking concepts suitable for preschool children. Quantitative data were collected through pre- and post-intervention assessments of STEM pedagogical competencies and self-efficacy, while qualitative feedback was obtained through reflective journals and focus group interviews. The findings demonstrate that vibe coding significantly reduced technical barriers to educational game development, enabling participants to produce functional learning applications with limited prior programming knowledge. Students reported increased motivation, improved confidence in integrating digital technologies into teaching practice, and greater awareness of interdisciplinary STEM pedagogy. The study also identified challenges related to prompt engineering, validation of AI-generated code, and pedagogical alignment of generated content. The results suggest that AI-assisted vibe coding represents a promising methodology for preparing future preschool teachers to design innovative, game-based STEM learning experiences. The paper contributes to emerging research on AI-supported educational design by proposing a practical framework for integrating generative AI into teacher education and highlighting implications for curriculum development, digital competence, and future educational innovation.

Keywords: *STEM, AI-assisted learning, gamification*

Analysis of Preschool Teacher Students' Opinions on Modern AI Tools for the Creation of Novel Gamified STEM Learning Materials

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Artificial intelligence is transforming educational content creation by providing educators with accessible tools for developing interactive, personalised, and gamified learning experiences. This study explores preschool teacher students' perceptions, attitudes, and experiences regarding the use of modern AI tools in designing innovative gamified STEM educational materials for early childhood education. The research sought to examine perceived usefulness, ease of use, creativity support, ethical considerations, and the intention to integrate AI-assisted technologies into future professional practice. Data were collected from undergraduate preschool teacher students following participation in workshops involving large language models, AI image generation systems, AI-assisted coding environments, and educational game development platforms. A mixed-method research design combined structured questionnaires based on the Technology Acceptance Model with open-ended questions and thematic analysis of participant reflections. The results indicate that students generally hold highly positive attitudes towards AI-supported educational content creation, recognising substantial benefits in reducing development time, enhancing creativity, improving visualisation of STEM concepts, and enabling rapid prototyping of educational games. Participants also emphasised the importance of maintaining pedagogical control over AI-generated materials, verifying factual accuracy, ensuring age-appropriate content, and addressing ethical concerns related to transparency, copyright, and responsible AI use. Although some participants expressed uncertainty regarding technical reliability and overreliance on AI-generated solutions, the overall findings demonstrate strong acceptance of AI as a collaborative educational design partner rather than a replacement for teachers' professional expertise. The study concludes that integrating modern AI tools into preschool teacher education can significantly strengthen digital pedagogical competencies and foster innovative approaches to STEM education. The findings provide practical recommendations for higher education institutions seeking to incorporate AI literacy, responsible AI use, and gamified instructional design into teacher preparation programmes.

Keywords: *STEM, generative AI, gamification*

Application of Artificial Intelligence Tools in Higher Education: Students' Experiences with Projects in the Change Management Course

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The rapid development of artificial intelligence (AI) technologies brings significant changes in the educational process and opens up new opportunities for the development of students' digital competencies. The aim of this paper is to analyse the experiences of students in the application of artificial intelligence tools during the realisation of project tasks within the subject of Change Management.

Students were tasked with using various AI-based tools to create digital content on selected topics. The projects included the production of video presentations of historical events, promotional advertisements, educational institution logos and original songs. In addition to creating the final products, the students documented the tools used, the work process, the time needed to implement the project, the challenges they encountered and the results achieved.

The research is based on the analysis of student reports and completed projects, with a special focus on the effectiveness of the applied tools, their ease of use and contribution to the learning process. The results show that the application of artificial intelligence enables faster creation of digital content, encourages creativity, increases student engagement and contributes to the development of skills necessary for the digital environment. At the same time, certain challenges related to query formulation, checking the accuracy of generated content and technical limitations of certain tools were observed.

It is concluded that artificial intelligence can represent a significant support to the teaching process and the development of modern competencies of students, with the need for responsible and critical application of these technologies in education.

Keywords: *artificial intelligence, higher education, digital competences, student projects, innovations in education*

03

3. EDUCATION, ECONOMICS, MANAGEMENT AND FUTURE COMPETENCIES

TPCE 2026

Book of Abstracts



Transforming Business Reporting: Power BI Skill Relevance in the AI Era

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The accelerated evolution of generative artificial intelligence (AI) has sparked intense academic debate over whether teaching traditional software tools in university curricula remains necessary. This study aims to evaluate the contemporary relevance and educational demand for Power BI competencies within AI-driven business environments. A literature review of the latest scientific papers was conducted to reveal the problematic nature of a shifting paradigm in modern business analytics, accounting, and information systems. The main findings reveal that while AI tools reduce routine data visualisation design times by up to 40 per cent, they continuously struggle with structural architecture, logic, and data hallucinations. Consequently, the nature of corporate competency has evolved rather than faced substitution. A distinct human oversight auditing imperative has emerged, shifting employee roles from report creators to data supervisors who require baseline Power BI literacies to mitigate compliance risks. Furthermore, professional institutions have systematically embedded structured business intelligence platform training into their global competency frameworks to satisfy a surging market demand for strategic hybrid roles. This study concludes that Power BI has transitioned from a manual dashboard tool into an indispensable pedagogical environment for data governance and critical literacy. The research implications for educational practice state that universities must reject generic AI prompting models in favour of a modernised, hybrid curriculum; students must first master the foundational structural logic of structured BI platforms to accurately direct, interrogate, and manage the AI systems automating modern enterprise reporting.

Keywords: *technological change, education and training, labour skills, Power BI (JEL codes: O33, P36, J24)*

Future Skills Development in Higher Education: Perceptions of Ukrainian University Students

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The Ukrainian labour market is undergoing significant transformation due to economic uncertainty, geopolitical challenges, and rapid technological change, particularly the growing role of artificial intelligence. The aim of this study is to examine students' perceptions of the role of higher education in developing future skills and their willingness to apply these skills to the socioeconomic development of their country. The study is based on a survey of 194 Ukrainian university students (spring 2026). Descriptive statistics, reliability analysis, and regression analysis were employed. Findings indicate that students perceive digital skills, problem-solving, adaptability, and innovation as the most important competencies for future economic development. Students who perceive stronger university support in developing future skills demonstrate higher levels of career readiness.

Keywords: *future skills, higher education, employability, career readiness, Ukrainian university students*

Lean Competencies as a Bridge Between Technical Education and the Needs of Modern Industry

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The rapid development of Industry 4.0, digital transformation, and ongoing changes in the labour market have significantly reshaped the competencies expected from the modern workforce. In addition to technical knowledge and professional expertise, contemporary organisations increasingly require employees to possess problem-solving abilities, teamwork skills, continuous improvement mindset, critical thinking, and adaptability to change. At the same time, educational institutions face the challenge of aligning learning outcomes with the evolving needs of industry, resulting in a persistent gap between the competencies demanded by employers and those developed through formal education. The aim of this paper is to examine the potential of Lean competencies as a mechanism for reducing this gap and strengthening the connection between technical education and the requirements of the modern industrial environment. The research is based on a review and analysis of relevant scientific literature in the fields of Lean management, human resource

development, technical education, and future workforce competencies. The analysis identifies key Lean competencies, including systematic problem solving, continuous improvement, process thinking, teamwork, and learning through practice. The findings indicate a strong alignment between the competencies fostered by Lean philosophy and those recognised by modern industry as essential for successful performance in the context of Industry 4.0. As a contribution, the paper proposes a conceptual model for the integration of Lean competencies into technical education. It is concluded that the application of Lean principles within educational processes can contribute to the development of a more flexible, proactive, and competitive workforce, better prepared to meet the challenges of a rapidly changing industrial landscape.

Keywords: *Lean management, technical education, industrial engineering, competencies*

The Risk of Applying Artificial Intelligence in the Premium Calculation Process in EU Law

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The increasing use of artificial intelligence (AI) in the insurance sector contributes to more efficient decision-making while simultaneously raising numerous legal, actuarial, and ethical issues, particularly regarding risks associated with algorithmic decision-making, personal data protection, and the prevention of discrimination against policyholders. A major challenge lies in achieving an appropriate balance between the pursuit of more accurate risk assessment, on the one hand, and the protection of the fundamental rights of policyholders, on the other. The application of AI in risk assessment may lead to the misclassification of risks, thereby directly affecting the determination of an appropriate insurance premium. Consequently, under European Union law, AI systems intended for risk assessment and insurance premium calculation for natural persons in life and health insurance are classified as high-risk AI systems. The aim of this paper is to identify the key risks associated with the application of AI in the insurance premium calculation process and to examine how these risks can be reduced to an acceptable level through appropriate human oversight. Furthermore, based on an analysis of relevant legislation, reports, and other scholarly literature in the fields of insurance and actuarial science, the study is expected to determine whether the use of AI in the process of insurance premium calculation achieves an appropriate balance between improving actuarial risk assessment and protecting the rights of insurance consumers. It is concluded that the responsible use of AI in the insurance sector requires the alignment of technological innovation with the European Union's regulatory requirements and the fundamental principles of actuarial science. The findings of this paper may contribute to improving the practices of insurance companies in the implementation of AI systems, the development of internal procedures for managing algorithmic risks, and further alignment of insurance operations with the regulatory requirements of the European Union.

Keywords: *artificial intelligence, insurance premium calculation, actuarial science, risk management*

Comparative Analysis of ESG Reporting and ESG Risk Management in Serbian Corporations

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The European Union has made the Corporate Sustainability Reporting Directive (CSRD) mandatory, with the European Sustainability Reporting Standards (ESRS) as its prescribed reporting standard. The quality of Environmental, Social, and Governance (ESG) reporting and ESG risk management thus becomes a significant challenge for the entire Union. Serbia, as a country aspiring to EU membership, is not currently directly bound by these rules but will have to comply with them once it becomes a member. This paper examines the quality of ESG reports of four large Serbian companies from different industries: Telekom Srbija, Delta Holding, MK Group, and Metalac. The analysis is based on the 2024 ESG reports and uses a framework combining the eight reporting quality principles

from the GRI Universal Standards 2021 with the ESRS principle of double materiality and three additional indicators specific to emissions reporting practice. The results show that two of the four companies meet the advanced criteria, which entail the ESRS methodology of double materiality and external verification. Three main weaknesses in ESG reporting were identified across the sample: limited or absent Scope 3 reporting among all analysed companies, absence of external verification in half of the sample, as well as terminological inconsistency in part of the sample. Each of these weaknesses leads to a specific ESG risk: reputational, climate transition, and regulatory. ESG reporting in Serbia is relatively uneven, leaving companies exposed to ESG risks that they do not adequately disclose. The findings point to the importance of education for sustainable economic development. Developing the key competences of future professionals requires integrating ESG reporting standards, double materiality, and the link between reporting and risk into finance and accounting curricula.

Keywords: *ESG reporting, ESG risk management, GRI Standards, ESRS*

Circular Economy of Spiritual Values

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The paper focuses on highlighting the forgotten importance of “trivial” spiritual values (thoughts, words, love, conscience, health, calmness, morality, fairness, freedom, artistic expression, faith, mercy, hope, meaning) as less noticeable but important parts of the (bio)circular economy. The concept of the circular economy emerged as a counterbalance to the linear economic model, in which the increased use of natural resources increases the amount of waste. Whereas the linear economy implies the irreversible movement of material resources in one direction, the circular economy is based on their constant circulation and repeated use, with minimal or no waste. Building on the scarce literature that connects recyclable material and non-material values, and drawing on selected literature from different fields (economics, music, philosophy, psychology, biology, metaphysics and religion), this paper seeks to add value to selected positive spiritual values, such as life force, water, health, music, love, upbringing and prayer. It is a modest contribution to the eternal quest for truth.

Keywords: *circular economy, health, upbringing, music, love, prayer*

Developing Future Leaders: Leadership as a Key 21st-Century Educator Competence

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The aim of this paper is to critically examine leadership as a professional competence of early childhood educators through the lens of contemporary leadership theories and poststructuralist critiques of power. The paper analyses transformational leadership theory (Burns; Bass), servant leadership (Greenleaf), and educational leadership theories (Leithwood; Fullan) in relation to poststructuralist perspectives informed by Foucault. The analysis indicates that leadership retains theoretical and practical relevance when conceptualised as a relational, ethical, and developmental process rather than a hierarchical mechanism of control. Educational leadership should be understood in terms of fostering voice, identity, agency, and participation. The paper discusses implications for educator preparation, professional development, and early childhood education policy.

Keywords: *leadership, early childhood education, agency, children's voice, educator competencies*

Fiscal Literacy and Tax Competences in Contemporary Higher Education

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In contemporary societies, fiscal literacy and tax competences represent essential components of economic citizenship, institutional trust, and responsible participation in public life. However, higher education curricula often treat taxation and public finance as specialised topics, rather than transversal competences relevant for students of economics, management, law, public policy, and related fields. The aim of this paper is to examine the importance of integrating fiscal literacy and

basic tax competences into contemporary higher education, with particular emphasis on their role in developing future professionals capable of understanding public revenues, budgetary processes, tax obligations, and the broader social effects of taxation. The methodology is based on qualitative analysis of relevant academic literature, educational policy documents, and selected examples of curricula in the fields of economics, finance, and public administration. The findings indicate that fiscal literacy contributes to a better understanding of the relationship between citizens, businesses, and the state, while tax competences strengthen students' ability to interpret economic policy, assess compliance risks, and participate responsibly in professional and civic contexts. The results also suggest that interdisciplinary teaching approaches can improve students' understanding of taxation as both an economic and social phenomenon. The paper concludes that fiscal literacy should be recognised as an important element of higher education reform. Its integration into curricula may support the development of key competences for the future, improve employability, and contribute to more responsible financial, business, and policy decision-making.

Keywords: *fiscal literacy, tax competences, higher education, public finance, economic citizenship*

Gender-Responsive Business as a Political Economy of Sustainable Development

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Gender-responsive business represents an increasingly important approach to sustainable development, linking economic performance, social responsibility, equality, and institutional accountability. In contemporary economies, business practices are not gender-neutral, as access to employment, income, leadership positions, entrepreneurship, finance, and unpaid care responsibilities continues to shape economic opportunities for women and men differently. Therefore, gender-responsive business should be understood not only as a corporate or ethical issue, but also as part of a broader political economy of sustainable development. The aim of this paper is to examine the role of gender-responsive business in promoting sustainable economic and social development, with particular emphasis on education, institutional change, and the development of future professional competences. The methodology is based on qualitative analysis of relevant academic literature, policy documents, and selected examples of gender-responsive business practices, including gender-responsive budgeting, equality planning, and socially responsible management. The findings indicate that gender-responsive business contributes to more inclusive labour markets, fairer allocation of resources, improved organizational decision-making, and stronger alignment between business strategies and sustainable development goals. The results also suggest that higher education has an important role in preparing future economists, managers, and policy professionals to understand gender equality as an economic, institutional, and developmental issue. The paper concludes that gender-responsive business should be integrated into educational programmes related to economics, management, finance, and public policy. Such integration may strengthen competences for sustainable development, improve social responsibility in business practice, and support more equitable economic governance.

Keywords: *gender-responsive business, political economy, sustainable development, higher education, social responsibility*

The Role of Education and Tourism in the Economic Development of Rural Areas of Serbia

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The economic lag of rural areas behind urban areas has been a problem in Serbia for decades. Since Serbia is a predominantly rural country in which more than half of the population lives in rural areas experiencing unfavourable economic and demographic trends, solving or alleviating this problem is of great importance. The goal of the research is to show that education and tourism development can contribute to faster economic development in rural areas. Analysis, synthesis and the comparative method were applied. The research results indicate that the development of tourism in rural areas of Serbia can positively contribute to their economic progress, primarily by providing new jobs and additional income to the population. However, if there are not enough young, motivated, educated

and professional people in those areas to realise those opportunities, the positive economic effects of the development of rural tourism will be less than possible and expected. Education has a key role in acquiring the knowledge and skills necessary for the development of entrepreneurship, the initiation of rural tourism and the provision of better quality tourist services. Accordingly, it is recommended that efforts be made simultaneously to increase the rural population's interest in tourism and its acquisition of the necessary knowledge and skills, and to retain and attract young, educated people to these areas.

Keywords: *tourism, education, economic development, rural areas*

Youth Unemployment Trends and Government Support Programmes in the Republic of Serbia

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The youth unemployment rate is one of the most sensitive indicators of the labour market, as it responds quickly to macroeconomic changes, demographic trends, and structural imbalances. Data from the Statistical Office of the Republic of Serbia show that, in Serbia, the position of young people improved in the period 2015–2018: the employment rate of young people aged 15 to 24 increased by almost 5% and reached 21%, while the unemployment rate in the 20–24 age group decreased by 14.4%. Nevertheless, despite these positive trends, Serbia still lags significantly behind the European Union average, where the youth unemployment rate in January 2024 was 14.9%, i.e., at the pre-COVID-19 pandemic level. The results indicate that support programmes have the potential to improve the employability of young people, but that their utilisation remains insufficient. The data show that a more extensive information campaign is needed so that potential beneficiaries are adequately informed about the available measures and eligibility requirements.

Keywords: *youth, unemployment, support programmes, Republic of Serbia, labour market*

The Role of Communication as a Skill in Education on the Circular Economy Concept

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This paper attempts to explain the circular economy concept, its influence on the creation of new jobs and the importance of communication as a skill that staff need in the workplace in a circular economy environment. The circular economy concept originally emerged within a special economic discipline, environmental economics, which combined welfare economics and the theory of economic growth with elements of sustainable development. The circular economy concept has contributed to the creation of new jobs. There are four basic directions of action on the labour market: completely new jobs are created, existing jobs are replaced, certain jobs are eliminated, and a number of jobs are redefined. In occupations that are not new or did not arise directly from the development of the circular economy, the way work is done changes, with consequences for the knowledge and skills employees must have. Communication, cooperation and creativity (e.g. staff training in recycling programmes) are among the skills specifically classified under the International Standard Classification of Education. Today, in the era of the circular economy, the tasks, skills and knowledge required in some professions are changing significantly. These changes need to be aligned with the labour market, and the concept itself must be grounded in education.

Keywords: *circular economy, communication, education, skills*

Strategic Brand Management in Higher Education: A Contemporary Perspective

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Contemporary higher education is characterised by intensifying competition, evolving stakeholder expectations, and accelerated digitalisation, making brand management in higher education

institutions increasingly complex. A higher education brand is no longer shaped solely by what an institution deliberately communicates, but also by the experiences, interactions, and relationships that different stakeholders develop with it. This paper aims to examine contemporary approaches to brand management in higher education and explore how the digital environment is transforming relationships between higher education institutions and their key stakeholders. The study is based on a systematic literature review. The findings indicate that the brand of a higher education institution can no longer be viewed primarily as the outcome of controlled institutional communication, but increasingly as the result of a complex network of relationships with current and prospective students, employees, alumni, companies and other partners, as well as the wider community and the public. In this process, the digital environment plays a significant role by connecting different stakeholders, enabling their more active participation, and increasing the visibility of their experiences and perceptions. Based on a synthesis of the findings, the paper proposes a brand management model that conceptualises the institutional brand as the focal point of a dynamic network of stakeholder relationships. The results highlight the need to move beyond viewing brand management primarily in terms of promotional activities and to integrate it into broader strategic management of stakeholder relationships and digital communication. The findings may be useful to education policymakers and higher education leaders in developing contemporary strategies for communication, reputation building, and stakeholder relationship management.

Keywords: *brand management, higher education institutions, digital environment*

The Impact of Investment in Education on Economic Growth and Competitiveness of the Economy: A Comparative Analysis of the Countries of the Western Balkans

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Education is widely recognised as one of the most important determinants of economic growth and long-term competitiveness. The aim of this paper is to examine the relationship between educational investment, economic growth, and competitiveness through a comparative analysis of selected Western Balkan countries. The research is based on secondary data from international databases including indicators related to public expenditure on education, GDP growth, human capital development, and competitiveness. The findings are expected to confirm that countries allocating greater resources to education achieve higher levels of human capital development, stronger economic performance, and improved competitive positions. The paper highlights the strategic importance of education as a long-term investment and its role in achieving sustainable economic development and social prosperity.

Keywords: *investment in education, human capital, economic growth, competitiveness, Western Balkans*

Lifelong Learning and Competence Development for Industry 4.0: Challenges of Sustainable Maintenance Management in the Textile Industry

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The textile industry is undergoing significant changes driven by digital transformation, sustainability requirements, and evolving labour market demands, creating a growing need for new professional competencies. Maintenance management plays a key role in ensuring production reliability, resource efficiency, and sustainable business performance. The aim of this paper is to examine the role of formal education, lifelong learning, and collaboration between higher education institutions and industry in developing competencies for sustainable maintenance management within the Industry 4.0 framework. The study is based on a review of relevant scientific and professional literature and an analysis of contemporary approaches to competence development in maintenance management. Particular attention is given to digital and green competencies, preventive and predictive maintenance, and continuous professional development as essential elements of workforce

readiness. The paper also emphasises the importance of integrating theoretical knowledge with practical experience through curriculum modernisation, industry partnerships, and work-based learning opportunities. The analysis indicates that integrating education, digital technologies, and sustainability principles improves maintenance management practices and strengthens the competitiveness of textile enterprises. The findings suggest that successful implementation of Industry 4.0 requires maintenance professionals with interdisciplinary knowledge, digital literacy, problem-solving abilities, and continuously updated skills. The paper concludes that strengthening university–industry cooperation, modernising higher education curricula, and promoting lifelong learning are essential for preparing future professionals. These findings provide practical recommendations for curriculum development and educational policies aimed at supporting sustainable industrial development and equipping graduates with the competencies required for the digital and green transition of the textile industry.

Keywords: *maintenance management, lifelong learning, textile industry, Industry 4.0, sustainable development*

Internal Financial Controls in the Public Sector as a Tool for Preventing Corruption and Abuse

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The subject of this paper is the analysis of the impact of implementing public internal control systems on reducing corruption and abuse in the spending of public funds. The research is focused on identifying key segments whose implementation contributes to strengthening transparency, efficiency, and effectiveness in the public sector. The main hypothesis is that strengthening internal controls undoubtedly leads to a reduction in misuse; however, this system does not yield satisfactory results as long as its application remains a matter of formal compliance with legal requirements rather than a substantive change in the approach to managing public funds. The evidence presented in this paper is based on an analysis of legal frameworks, strategies for the development of public internal financial controls, and reports of the Central Harmonisation Units of Bosnia and Herzegovina, as well as relevant research on corruption and abuse in the public sector.

Keywords: *public sector, internal financial controls, corruption prevention, abuse*

Lifelong Learning and Future Competencies in the Conditions of Digital Transformation

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The rapid development of digital technologies has significantly transformed the labour market, educational systems, and everyday life, creating a growing need for continuous learning and the development of new competencies. In this context, lifelong learning has become a key prerequisite for personal, professional, and social development. The aim of this paper is to examine the importance of lifelong learning in developing competencies required for successful adaptation to digital transformation and future labour market demands. The research is based on a review and analysis of relevant scientific literature, policy documents, and contemporary educational practices related to lifelong learning and digital competencies. Particular attention is given to competencies such as digital literacy, critical thinking, problem-solving, adaptability, creativity, communication, and collaborative skills, which are increasingly recognised as essential for the future workforce. The findings indicate that digital transformation requires continuous acquisition and updating of knowledge and skills throughout an individual's life. Educational institutions, employers, and policymakers play a crucial role in creating supportive environments that encourage lifelong learning and facilitate access to diverse learning opportunities. The analysis also highlights challenges related to unequal access to digital resources and the need for inclusive educational strategies. The paper concludes that lifelong learning represents a fundamental mechanism for developing future competencies and strengthening individual and societal resilience in the digital era. The findings have important implications for educational policy and practice, emphasising the need for flexible learning pathways, digital inclusion, and continuous professional development programmes.

Keywords: *lifelong learning, digital transformation, future competencies, digital skills, education*

Personalised Communication in Marketing: Between Consumer Usefulness and Privacy Invasion

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The modern development of digital technologies, artificial intelligence and big data analytics has enabled companies to develop a high degree of personalisation of marketing communication, adjusting the content, time and channel of communication to the individual characteristics and preferences of consumers. Numerous studies indicate that personalised communication contributes to greater relevance of marketing messages, improvement of user experience, increase of satisfaction, trust, engagement and purchase intention. However, the intensive collection and processing of personal data simultaneously raises numerous questions regarding privacy protection, transparency of data processing and ethical aspects of digital marketing. The aim of this paper is to analyse the relationship between the perceived usefulness of personalised marketing communication and consumer concerns about privacy protection, based on the analysis of the relevant literature. Special attention is paid to the theoretical frameworks that explain the acceptance of personalisation, such as the Privacy Calculus Theory and the Persuasion Knowledge Model, as well as the role of trust, transparency, control over personal data and regulatory frameworks, primarily the General Data Protection Regulation (GDPR). Literature analysis shows that consumers respond positively to personalised communication when they recognise the clear value they receive in return for sharing their data. On the other hand, excessive or non-transparent personalisation can lead to a sense of privacy violation, a decrease in trust and a negative attitude towards the brand. It is concluded that the long-term success of personalised marketing communication depends on establishing a balance between the efficient use of data and a responsible, ethical and transparent attitude towards consumer privacy.

Keywords: *personalisation, privacy, digital marketing, data ethics, consumer trust*

Advancing Sustainable Development Through Circular Economy Strategies: A Review of Their Contribution to the SDGs

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Achieving the Sustainable Development Goals (SDGs) requires transformative approaches that reconcile economic development with environmental protection and social well-being. The circular economy (CE) has emerged as a promising model to support this transition by promoting resource efficiency, waste prevention, closed-loop material flows, and regenerative production and consumption systems. While the relationship between the circular economy and SDGs is gaining increasing attention, existing studies often focus on individual sectors, specific SDGs, or isolated circular practices, which limits a comprehensive understanding of how circular economy strategies contribute to sustainable development overall. The aim of this review paper is to synthesise and evaluate current scientific knowledge on the contribution of circular economy strategies to the achievement of the SDGs. The findings indicate that strategies such as resource efficiency, product life extension, reuse, repair, remanufacturing, recycling, and industrial symbiosis contribute most significantly to SDGs 12, 13, 9, 11, and 8, while simultaneously generating positive spillover effects across other goals. However, the literature also identifies significant challenges, including inconsistent assessment methodologies, limited integration of social sustainability indicators, and insufficient evidence on the long-term systemic impacts of circular interventions. The paper provides a comprehensive synthesis of current knowledge and can provide valuable guidance to researchers, policymakers, educators, and practitioners in designing strategies that enhance the contribution of circular economy practices to sustainable development.

Keywords: *circular economy, Sustainable Development Goals (SDGs), circular economy strategies, sustainable development*

Patterns of Consumer Behaviour in Planned and Unplanned Purchases

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The process of understanding purchase decision-making contributes to more efficient creation of marketing strategies and better market positioning of the company. The aim of the paper is to identify the key differences between consumer behaviour in planned and unplanned purchases, and to consider their significance for marketing and business practice. The paper analyses the basic concepts of consumer behaviour, the purchase decision-making process and the factors that influence purchasing behaviour. The empirical part of the paper is based on research conducted among consumers with the aim of examining their attitudes regarding planned and unplanned purchases. The results of the research indicate that a planned purchase is more closely related to rational decision-making, information and cost control, while an unplanned purchase is more often conditioned by impulses, emotions and the influence of the immediate environment. The obtained findings indicate the importance of understanding different patterns of purchasing behaviour for creating more effective marketing activities and more successful strategic positioning of the company.

Keywords: *consumer behaviour, planned purchases, unplanned purchases, marketing, strategic positioning*

The Impact of Packaging Design Changes on Consumers' Purchasing Decisions

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Packaging represents an element of communication between the product, the brand, and the consumer. In addition to its protective and functional roles, packaging also has marketing, communication, and psychological functions. The visual appearance of packaging, including colours, typography, graphic elements, and textual hierarchy, can significantly influence how consumers perceive a product. This paper analyses the impact of changes in packaging design on consumer attitudes and behaviour. It examines the basic functions of packaging, principles of visual communication, and design elements that contribute to brand recognition and positioning. The paper also presents an online survey examining how changes in the visual identity of packaging affect consumer trust in the brand, consumer loyalty, and purchasing decisions at the point of sale. Particular attention is given to the transition to environmentally friendly, recycled materials. The results provide insight into consumers' habits and attitudes towards changes in packaging appearance and identify the elements that contribute most to maintaining brand recognition. The survey results confirmed that consumers react differently to changes in packaging design, expressing doubts about radical transformations, mainly due to concerns that changes in packaging appearance may be associated with product composition or reduced quality. Based on the results, guidelines for planning and implementing packaging redesign are defined, with the aim of maintaining continuity in visual identity and reducing the risk of negative consumer reactions. The results contribute to a better understanding of the relationship between graphic design, packaging materials, and consumer behaviour, as well as to more successful sales of consumer products.

Keywords: *packaging, packaging design, consumer behaviour, branding, sustainable packaging*

Theory and Practice in the Contemporary Educational Context Aimed at Increasing Intentions towards Self-Employment

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Contemporary changes in the labour market, technological development and increasing uncertainty of traditional employment create a need for higher education institutions to develop students' competencies for both employment and self-employment. Entrepreneurship education represents an important component of contemporary educational practice because it can contribute to the development of entrepreneurial knowledge, skills, self-efficacy and intentions to engage in entrepreneurial activity. The purpose of this paper is to examine the theoretical and practical

relationship between contemporary education and students' entrepreneurial potential and intentions towards self-employment and new venture creation. Particular attention is given to students of vocational higher education in the fields of economics, information technology and preschool education. The theoretical framework is based primarily on the Theory of Planned Behaviour, the concept of self-efficacy and contemporary practice-based approaches to entrepreneurship education. The empirical part proposes a quantitative study examining differences in entrepreneurial potential and self-employment intentions according to students' field of study, previous entrepreneurial experience and participation in entrepreneurship-related educational activities. The proposed methodology includes descriptive statistics, reliability analysis, t-test and ANOVA. The paper argues that the integration of theoretical knowledge with practical learning, experimentation, mentoring and interaction with the business environment can provide an important educational basis for developing students' entrepreneurial competencies.

Keywords: *entrepreneurship education, entrepreneurial potential, entrepreneurial intentions, self-employment, higher education, vocational education, self-efficacy*

Strategy for the Continuity of the Reputational Potential of Higher Education Institutions

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The strategy for the continuity of reputational potential is a holistic approach to the management of educational organisations that identifies the recognisable attributes which have carried an institution's image for years. In developing such a strategy, the focus is on building organisational resilience and the ability to respond effectively, protecting the interests of all key stakeholders, including students and professors, through reputation, brand and activities that create the values of the knowledge economy. Reputational potential is presented as a key intangible asset that directly creates intangible value, attracts collaborators and facilitates the work of educational institutions. The importance of reputation as a segment of intellectual capital for competitiveness is also emphasised. A strategy of reputational continuity promotes the good opinion created through the work of institutions. Reputation is one of the characteristics that are particularly difficult to imitate, which makes it a valuable source of competitive advantage. Over time, positive perceptions crystallise into intangible knowledge assets, as a result of which the educational institution occupies a significant and specific position in the minds of stakeholder and influential groups. Modern technologies and the new media environment place the reputation of schools within the zone of socially responsible business.

Keywords: *continuity strategy, reputational potential, knowledge economy*

Bridging External and Internal Evaluation in Assuring the Quality of Education

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Quality assurance in education is increasingly recognised as a foundational pillar of sustainable economic development and social responsibility. Effective evaluation systems enhance institutional capacity and educational accountability. External evaluation and school self-evaluation jointly constitute the dominant quality assurance model in contemporary education systems. While each mechanism offers distinct advantages, both entail significant limitations when applied in isolation, prompting growing scholarly and policy interest in their presumed complementarity.

This paper critically examines the relationship between external evaluation and school self-evaluation, questioning whether their currently envisioned forms of interaction are capable of genuinely supporting educational quality. The findings draw on an ethnographic case study conducted in a public primary school in Belgrade, Serbia. Intensive fieldwork was carried out between March and June 2024 and included ethnographic field notes, analysis of school documentation, and semi-structured interviews with key school actors.

The study reveals that the relationship between the two evaluation mechanisms is predominantly experienced as a form of external control, with differences emerging primarily at the procedural level. Theoretically anticipated models of alignment between internal and external evaluation appear insufficient to overcome these tensions, ultimately limiting their transformative potential.

In response, the paper proposes an alternative approach centred on a mediating “critical friend” role – a supportive yet analytically rigorous actor positioned between external and internal evaluation, capable of fostering dialogue and reflection. Such a structure may offer a more promising pathway towards meaningful evaluation integration, and by extension, towards education systems that more effectively serve long-term economic and social development goals.

Keywords: *external evaluation, school self-evaluation, quality assurance in education, ethnographic case study, critical friend*

Consumer Perception of Coffee Quality and the Economic Effects of Implementing the CRM System

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Customer Relationship Management (CRM) has become an essential strategic tool for improving service quality, strengthening customer loyalty and increasing business competitiveness in modern retail and hospitality. In an increasingly competitive coffee market, understanding consumer preferences and purchasing behaviour is crucial for developing effective marketing strategies and ensuring sustainable business growth. The aim of this study is to examine consumer habits, perceptions of coffee quality and the potential contribution of CRM systems to improving customer relationships and business performance. The research was conducted using a structured questionnaire consisting of 26 questions administered to 49 respondents in Serbia. The collected data were analysed using descriptive statistical methods to identify consumer characteristics, purchasing habits and attitudes towards coffee quality and brand selection. The findings indicate that coffee consumption is a daily habit for most respondents, with supermarkets being the dominant purchasing channel and domestic coffee representing the most frequently consumed product. Respondents also emphasised the importance of product quality and personalised customer experience, suggesting that CRM-supported communication and loyalty programmes can positively influence purchasing decisions and customer retention. The results confirm that effective CRM implementation contributes to improved customer satisfaction, stronger brand loyalty and enhanced business quality. These findings have practical implications for managers in the coffee industry by highlighting the importance of digital customer relationship management, data-driven decision making and personalised marketing strategies. Furthermore, they may support the development of educational programmes in marketing and business management by emphasising the role of digital competencies and customer-oriented business practices.

Keywords: *customer relationship management (CRM), coffee industry, quality management, customer satisfaction, customer loyalty, consumer behaviour*

Perception of Water Quality and Consumer Behaviour in Serbia

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The quality of drinking water is a crucial public health and consumer behaviour concern, especially in nations grappling with issues related to water infrastructure and public confidence. This paper investigates how consumers' perceptions of water quality affect their bottled water purchases in Serbia. The research seeks to pinpoint the primary factors that influence the decision between tap water and bottled water, emphasising trust, safety perceptions, and consumer preferences. The study was carried out through an online survey disseminated across various regions of Serbia. A total of 143 participants took part in the research. The questionnaire encompassed socio-demographic details, water consumption habits, attitudes towards the safety of tap water, and factors influencing bottled water purchasing choices. Descriptive statistical techniques were utilised to analyse the gathered data. The findings reveal that a considerable number of respondents express doubt or lack of trust regarding the safety of tap water, which directly affects the frequency of bottled water consumption. Factors such as taste, perceived quality, brand reputation, and the source of water emerged as the most significant in the selection of bottled water, while price was deemed less

important. Additionally, the majority of respondents indicated a greater willingness to consume tap water if regular testing and clear information were made available. The results imply that consumers' perceptions of water quality significantly influence their purchasing behaviour. Enhancing transparency, communication, and trust in public water supply systems could diminish the dependence on bottled water and promote more sustainable consumption practices.

Keywords: *drinking water quality, consumer perception, bottled water, purchasing behaviour, Serbia*

Crisis Management in Educational Institutions: Methodological Framework, System Resilience, and Action Protocols

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This paper analyses the effectiveness of implementing the Programme of Support for Educational Institutions in Crisis Situations, with particular reference to the practical application of the Rulebook on the Protocol for Institutional Response to Violence, Abuse and Neglect. Crisis events in the school environment, whether internal (violence, the death of a pupil or staff member) or external (natural disasters, bomb threats), require a systemic, multidisciplinary and coordinated response. The paper defines the key principles for strengthening the resilience of educational institutions: continuity, cooperation, accessibility and effectiveness. Using the example of a specific educational institution, it analyses the structure of the Crisis Response Team, the clear definition of safe zones, alarm algorithms and operational action steps. The paper highlights the critical role of school management (the head teacher) in communicating with the media and external protection services and in implementing psychosocial support measures in the post-crisis period.

Keywords: *crisis events, pupil protection, crisis team, institutional resilience, protocol*

Artificial Intelligence as a Tool for Improving Marketing and the Use of Electronic Banking Services

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In recent years, the development of artificial intelligence has significantly changed the way companies do business, including in the field of sales management. Contemporary AI solutions enable the collection and processing of large amounts of data, more accurate forecasting of sales results, a better understanding of customer needs and the automation of many business activities. For this reason, organisations increasingly use artificial intelligence to support business decision-making and to improve sales processes. The aim of this paper is to analyse the possibilities of applying artificial intelligence in sales management, to identify and present the key benefits it brings, and to point out the challenges that accompany its implementation. The paper is based on an analysis of the available scholarly and professional literature, as well as relevant reports by international organisations and leading technology companies developing AI solutions for business use. Content analysis, the comparative method and descriptive analysis were used to examine current trends in the application of artificial intelligence in sales. The results show that the application of artificial intelligence improves sales management processes through more efficient market analysis, more efficient and faster communication with customers, the automation of routine tasks and better planning of sales activities. On the other hand, there are many challenges related to data protection, ethical issues, the need for additional employee competencies and the level of initial investment in such business solutions. Artificial intelligence will play an increasingly important role in sales management in the coming period. Companies that successfully integrate AI technologies into their operations can achieve greater efficiency, improve customer relationships and increase their market competitiveness.

Keywords: *banking, digitalisation, marketing, electronic banking, artificial intelligence*

Comparative Analysis of the Legislative Framework for Public-Private Partnerships in Serbia and Montenegro

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The subject of this research is a comparative legal analysis of the legislative framework governing public-private partnerships (PPP) in the Republic of Serbia and Montenegro. The paper aims to identify the similarities and differences between the Serbian Law on Public-Private Partnerships and Concessions (Official Gazette of RS, Nos. 88/2011, 15/2016 and 104/2016) and the Montenegrin Law on Public-Private Partnerships (Official Gazette of Montenegro, No. 73/2019), as well as to assess the degree of their alignment with European Union law, particularly Directive 2014/23/EU on the award of concession contracts. The applied methods include the normative-legal, dogmatic-legal, comparative-legal, historical-legal and teleological methods, combined with content analysis of relevant primary and secondary legal sources. The research findings indicate that the Montenegrin legislative model is more recent and comprehensive, introducing a dedicated Agency as the central institutional body, while the Serbian model operates through the Commission for Public-Private Partnership with an advisory function. Furthermore, the Montenegrin law provides a more detailed regulation of financiers, risk allocation and competitive dialogue, while the Serbian law has developed a richer practice and a higher number of implemented projects. The conclusion suggests the need for further amendments to the Serbian law towards full harmonisation with the *acquis communautaire*, as well as the need for more intensive practical implementation of the Montenegrin law.

Keywords: *public-private partnership, concession, comparative law, legal harmonisation*

Profitability Analysis of Private Higher Education Institutions in the Republic of Serbia

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Private higher education institutions function as businesses that must ensure long-term financial sustainability while delivering educational services. Although their primary mission is academic, these institutions are strongly driven by profit-seeking motives in order to survive in a competitive market. This paper examines the financial performance and long-term viability of private higher education providers. The research conducts a comprehensive profitability analysis covering the ten-year period from 2015 to 2024. Standard financial ratios, including return on assets (ROA), return on equity (ROE) and net profit margin, were calculated using the official financial statements of private higher education institutions (HEIs); the analysis shows that some private HEIs operate at a loss. The findings indicate that higher education is a challenging business sector with tight margins and significant financial risks for certain market participants. These insights are valuable for educational policymakers in refining accreditation standards and for management in improving financial strategies.

Keywords: *profitability ratios, financial statement analysis, private higher education institutions, Republic of Serbia*

The Impact of Financial Literacy and Education on the Development of Investment Culture

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In contemporary conditions of a market economy, a wide range of financial products and services has been developed, while their effective use is constrained by insufficient financial literacy and awareness among market participants. A stable and well-developed financial system is an important indicator of national economic growth and development, while trust and security of participants are essential prerequisites for its functioning. OECD research on financial literacy shows a low level of knowledge regarding basic financial concepts and instruments, even in developed countries. Insufficient financial knowledge often results in unfavourable financial decisions and greater exposure

to financial risk. This paper examines the importance of financial education and awareness, their impact on the development of investment culture, and analyses factors that contribute to improved investment decision-making under uncertainty and risk. Particular emphasis is placed on trust as a fundamental principle upon which investment culture is built. The methodology of the paper is based on descriptive and comparative analysis of relevant professional and scientific literature, as well as reports in this field. Through comparative analysis of data from competent institutions and international studies, the relationship between financial education, financial literacy, and enhancement of investment culture is examined. The results indicate that higher levels of financial knowledge significantly contribute to improvement of investment culture. Regulatory bodies play an important role through policies that support information dissemination, strengthen trust, and increase transparency in the financial system. Changes in business conditions shape financial awareness and create opportunities for continuous improvement of investment culture.

Keywords: *financial literacy, financial education, financial awareness, investment culture*

The Role of Education and Tourism in the Economic Revelopment of Rural Areas of Serbia

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The problem of rural areas lagging behind in economic development compared to urban areas is a decades-long problem in Serbia. From the fact that Serbia is a predominantly rural country where more than half of the population lives in rural areas that are experiencing unfavorable economic and demographic trends, the importance of solving or alleviating this problem arises. The goal of the research is to show that education and tourism development can contribute to faster economic development in rural areas. Analysis, synthesis and comparative methods were applied in the work. The research results indicate that the development of tourism in rural areas of Serbia can positively contribute to their economic progress, primarily by providing new jobs and additional income to the population. However, if there are not enough young, motivated, educated and professional people in those areas to realize those opportunities, the positive economic effects of the development of rural tourism will be less than possible and expected. Education has a key role in acquiring the necessary knowledge and skills necessary for the development of entrepreneurship, the initiation of rural tourism and the provision of better quality tourist services. In this direction, recommendations are also made that at the same time work must be done on the interest of the rural population in tourism and on acquiring the necessary knowledge and skills, but also on retaining and attracting young educated people to these areas.

04

4. MEDICINE, HEALTH CARE AND MULTIDISCIPLINARY EDUCATION

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Book of Abstracts



Artificial Intelligence in Musculoskeletal Radiology and Orthopaedics: Experiences and Challenges

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The rapid influx of diagnostic and logistical data presents a substantial challenge for contemporary healthcare institutions (HCI), demanding accelerated, precise decision-making. This descriptive study explores the strategic implementation of artificial intelligence (AI) in HCI. The aim is to analyse how integrated AI systems monitored in HCI can optimise clinical diagnostics and healthcare management without compromising legal and ethical standards. The study evaluates operational insights and outcomes from a pioneer HCI following the deployment of specialised AI diagnostic software. Over a six-month monitoring period, the system processed radiological and orthopaedic data, automatically detecting fractures and degenerative changes to provide automated secondary evaluations. During the observation period, AI analysed 2,118 radiographic examinations, identifying 411 degenerative changes, 1,507 suspected fractures, and 200 spinal abnormalities. Radiologists concurred with AI findings in 1,056 cases, while disagreement was documented in only 8 cases. AI also facilitated the identification of 331 urgent orthopaedic referrals, supporting faster clinical prioritisation. These findings demonstrate high concordance between AI-assisted analysis and expert interpretation, highlighting AI's potential to improve diagnostic consistency and workflow efficiency. HCI that combine good governance with intelligent technologies will be more resilient, more efficient, and more patient-centred. Artificial intelligence will not replace leaders in healthcare. However, leaders who embrace artificial intelligence will transform the way hospitals are managed. If we do not control AI, AI will eventually control us.

Keywords: *artificial intelligence, healthcare management, clinical decision support, patient safety*

Integration of Theoretical and Clinical Education in Nephrology: Challenges and Perspectives in the Education of Future Healthcare Professionals

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Introduction: Contemporary medical education is undergoing continuous transformation driven by advances in medical science, digital technologies, and the increasing demands of modern healthcare systems. Nephrology, as a complex subspecialty of internal medicine, requires the integration of theoretical knowledge, clinical skills, and professional competencies. Traditional teaching models are no longer sufficient to adequately prepare students for the challenges of contemporary clinical practice, leading to the growing adoption of innovative educational approaches based on competency-based education, simulation-based learning, and digital technologies. **Objective:** To analyse contemporary educational models in nephrology, assess the importance of integrating theoretical and clinical education, and explore opportunities for enhancing the educational process through the implementation of simulation-based learning, digital technologies, and artificial intelligence. **Methods:** A narrative review of the available literature in the fields of medical education and nephrology was conducted, with particular emphasis on studies published between 2020 and 2025. Publications addressing competency-based education, problem-based learning, case-based learning, simulation-based education, digital learning platforms, and the application of artificial intelligence in medical education were analysed. **Results:** Contemporary educational models contribute to the improvement of students' clinical reasoning, practical skills, and professional competencies. Simulation-based learning and digital technologies facilitate the safe and effective acquisition of experience in managing complex clinical scenarios, while artificial intelligence-based tools offer new opportunities for personalised learning and the development of clinical decision-making skills. **Conclusion:** The integration of theoretical and clinical education represents a cornerstone of high-quality training for future healthcare professionals in nephrology. The broader implementation of modern educational technologies may contribute to the development of competent practitioners capable of addressing the growing challenges of contemporary nephrology practice.

Keywords: *nephrology, clinical practice, simulation-based learning, digital technologies, artificial intelligence*

Contemporary Challenges in Reproductive Health and Nursing Care Education

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Education on reproductive health and nursing care is an essential prerequisite for improving health literacy, preserving reproductive health, and enhancing the quality of healthcare services. Contemporary social and technological developments bring numerous challenges to the educational process, including the spread of misinformation through digital media, insufficient health literacy among certain population groups, cultural barriers, and the need for continuous professional development of healthcare workers. At the same time, advances in information and communication technologies enable the implementation of innovative teaching methods such as e-learning, simulation-based education, and interactive educational platforms. The aim of this paper is to analyse the most significant contemporary challenges in education on reproductive health and nursing care and to consider opportunities for improving educational processes. Modern educational approaches should be evidence-based, interdisciplinary, and focused on active learner participation. The study included 37 nursing students from different years of study at the Academy of Applied Studies Sirmium, Sremska Mitrovica. The findings showed that students recognise reproductive health as an important component of professional education. Most students believe that topics related to sexual and reproductive health, family planning, and contraception are covered during their education; however, they also emphasised the need for additional training. Students generally support the use of digital technologies in reproductive health education and consider continuous professional education of healthcare workers essential for improving the quality of nursing care and health education. Continuous improvement of educational programmes contributes to the development of healthcare professionals' competencies and the improvement of population health outcomes.

Keywords: *reproductive health, nursing care, education, digital technologies, contemporary challenges*

Algorithm for Responding to Infectious Diseases among Children in Preschool Institutions

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Infectious diseases among preschool children are a frequent occurrence in educational collectives due to the specific nature of the group environment and children's developing immune systems. The aim of this paper is to examine the early detection of disease symptoms in children during their stay in the collective and to verify compliance with defined procedures in accordance with current legal regulations. A descriptive method and the analysis of documentation sheets were used in the study. The research covered 40 facilities of the Preschool Institution "11. april" New Belgrade in the period from January to June 2026. A presentation of children's illnesses by types of diseases based on observed symptoms during their stay in the collective, isolation, and referral to a paediatrician by month is provided, as well as a presentation of confirmed diagnoses based on medical certificates. Based on the steps taken, the validity of the management algorithm for medical nurse-associates in early symptom recognition, parent notification, and the implementation of measures was examined. It is concluded that children staying at PI "11. april" exercise their right to health care and preventive health protection in accordance with the law, that medical nurse-associates in charge of care and preventive health protection act according to the prescribed instructions and maintain records, and that children's illnesses correspond to typical infectious diseases for this age and season, while the implementation of anti-epidemic measures, health education, and counselling with parents play a key role.

Keywords: *infectious diseases, children, collective*

Ergonomics of Nursing Work and the Importance of Kinesiological Measures in the Prevention of Occupational Diseases

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Nurses are among the healthcare professionals at the highest risk of developing work-related musculoskeletal disorders because of frequent patient handling, repetitive movements, awkward postures, and prolonged physical workload. These disorders negatively affect nurses' health, work ability, and the quality of patient care, highlighting the importance of ergonomic practice and regular physical activity as preventive strategies.

This study aimed to examine the association between the application of ergonomic principles, regular physical activity, and the prevalence of occupational musculoskeletal complaints among nurses.

A descriptive cross-sectional study was conducted among 80 nurses employed in hospital settings using a structured questionnaire. Data were collected on socio-demographic characteristics, musculoskeletal symptoms, ergonomic practices, and physical activity. Descriptive statistics and the chi-square test were used for data analysis, with statistical significance set at $p < 0.05$.

Lower back pain was reported by 68.3% of participants, followed by neck pain (54.2%) and shoulder pain (46.7%). Regular physical activity was reported by 41.7% of respondents. Nurses who consistently applied ergonomic principles and engaged in regular physical activity reported significantly lower rates of back and neck pain ($p < 0.05$), suggesting that preventive workplace behaviours contribute to reducing musculoskeletal complaints.

The findings emphasise the importance of integrating ergonomic education and structured physical activity programmes into both undergraduate nursing education and continuing professional development. Strengthening educational initiatives and workplace health promotion may improve nurses' well-being, reduce occupational health risks, and enhance the quality and sustainability of healthcare services.

Keywords: ergonomics, nurses, occupational health, work-related musculoskeletal disorders, physical activity, nursing education

The Role of SPF in the Prevention of Melanoma: The Importance of Education

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Melanoma represents a significant public health challenge due to its aggressive biological behaviour and increasing incidence worldwide. Epidemiological trends in Serbia and neighbouring countries indicate the importance of strengthening primary prevention strategies, particularly those focused on reducing harmful exposure to ultraviolet (UV) radiation. Photoprotection, including the appropriate use of sun protection factor (SPF) products, is an important component of melanoma prevention; however, its effectiveness largely depends on the knowledge, attitudes, and protective behaviours of the population. The aim of this paper is to present the epidemiological characteristics of melanoma, explain the role of UV radiation in its development, and analyse the importance of photoprotection, SPF use, and especially education in melanoma prevention. The paper is based on a review and analysis of relevant scientific and professional literature, epidemiological data, and available evidence on educational interventions in the field of sun protection. Findings from the reviewed literature indicate that educational interventions can improve knowledge about UV-related risks, correct misconceptions regarding SPF products, and promote more consistent photoprotective behaviours. Particular importance is placed on education of children and adolescents, as early adoption of sun-protective habits may contribute to long-term preventive behaviour. Integrating evidence-based sun protection education into educational and healthcare practice, alongside stronger multidisciplinary cooperation, may improve photoprotective behaviours and contribute to more effective primary prevention of melanoma.

Keywords: melanoma, SPF, photoprotection, ultraviolet radiation, education

Preschool Teachers' Role in Multidisciplinary Support for Hospitalised Children

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A child undergoing hospital treatment does not cease to be a child – they continue to need play, learning, creativity, a sense of belonging, and emotional security. Therefore, the role of the preschool teacher in a hospital-based preschool group extends beyond educational activities and becomes an important component of multidisciplinary support aimed at preserving the child's development and well-being during hospitalisation.

The aim of this review paper is to examine, through an analysis of relevant national and international scientific and professional literature, supported by insights from professional practice, the role of the preschool teacher as an active member of the multidisciplinary team. Particular attention is given to collaboration with physicians, nurses, psychologists, special education professionals, school teachers, and families in creating a stimulating environment that supports each child's individual needs and developmental potential. The paper also highlights the importance of play, artistic expression, creative activities, and educational play in promoting emotional well-being, self-confidence, social skills, and continuity in learning and development.

The reviewed literature indicates that a multidisciplinary approach successfully integrates healthcare with educational and psychosocial support, reducing the negative effects of hospitalisation and fostering children's overall development. The findings suggest that preschool teachers play a vital role in connecting the child, the family, and the multidisciplinary team. It is concluded that their professional competencies contribute significantly to maintaining continuity in children's learning and development, ensuring that hospitalisation does not interrupt childhood but supports resilience, growth, and well-being despite illness.

Keywords: *preschool teacher, hospitalised children, multidisciplinary team, hospital-based preschool group, child development, creative activities*

Parental Fatigue in Inpatient Paediatric Rehabilitation: A Pilot Study

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This pilot cross-sectional study included 30 parents of children hospitalised at the Clinic for Physical Medicine and Rehabilitation, Institute for Health Care of Children and Youth of Vojvodina. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) and daytime sleepiness using the Epworth Sleepiness Scale (ESS). Sleep-related complaints were reported by 43.3% of participants; 76.6% reported fatigue in the previous seven days. Mean sleep duration was below recommended adult levels. Poor sleep quality was associated with shorter sleep duration and longer sleep latency ($p < 0.05$). Parental fatigue is prevalent during inpatient paediatric rehabilitation and may negatively influence parental engagement in the therapeutic process.

Keywords: *parental fatigue, sleep quality, inpatient rehabilitation, family-centred care*

Breast Carcinoma – Pathogenesis and Prognosis

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Context and significance of the problem: Estimating the time of onset of breast cancer is crucial for early detection and the development of personalised therapies, which directly increases patient survival rates.

Aim: To identify the initial phase of carcinogenesis for immediate therapeutic intervention and to guide the treatment protocol.

Methodology: To model the change in tumour volume, we used an exponential growth model. To determine the time of origin of the initial cell, we used the Malthusian model of exponential extrapolation of biological growth. The estimate of the chance of 10-year recurrence-free survival was obtained based on PREDICT UK.

Results: We determined that 60 months ago the carcinoma volume was $16.5 / 16777216 \approx 0.000000984 \text{ cm}^3$, and that tumour initiation was approximately: ~85 months (~7 years) ago. The calculated chance of 10-year survival is 88–90% or more.

Conclusion: It was determined that the tumour originated 7 years ago and that 5 years ago its size was 984 nanograms, which was not possible to diagnose with medical devices at that time.

Implications for educational policy and/or practice: Integration of oncology literacy and cancer prevention into medical and related educational programmes.

Keywords: *breast cancer, Ki-67, PREDICT UK*

The Role of the Nurse in Primary Health Care

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Context and significance of the problem The role of the nurse in primary health care is great, considering that she deals with the provision of services to both the healthy and the sick population. **Aim** The aim of the paper is to point out the most important aspects of health care, and treatment services provided by nurses employed in primary health care. **Methodology** The literature review available in scientific medical databases in the last five years was used as material, with the aim of reviewing the results of the latest research in the selected field. **Findings with brief interpretation** The results show that nurses play a significant role as team members in health centers, in working with children, pregnant women, the adult population, and in regular visits and home care and treatment services. Working to preserve and improve public health, as well as caring for geriatric patients and those in the terminal stage of illness, presents a distinct professional challenge. **Conclusions** Prevention, education, health education work for the healthy and care and treatment of the sick population, are the postulates of the work of a nurse in primary health care

Keywords: 3

Knowledge and Attitudes of Nurses About the Prevention of Hospital-Acquired Infections in Children

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This cross-sectional survey study examined the knowledge and attitudes of nurses in paediatric nursing care regarding the prevention of hospital-acquired infections ($n = 60$, October–December 2025). The results showed high knowledge of the importance of hand hygiene (83%), with lower knowledge of proper PPE use (63%), isolation measures (63%), and surface disinfection (65%). Only 27% demonstrated adequate knowledge of monitoring and reporting hospital-acquired infections, and 36% were familiar with contemporary protocols for prevention of infections associated with invasive procedures. The majority had positive attitudes towards the importance of infection prevention.

Keywords: *nurses, paediatric nursing care, hospital-acquired infections, prevention*

Nutritional Challenges of Meal Planning for Alternative Diets: Students' Attitudes and Experiences

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The growing popularity of alternative diets, including vegetarian, vegan, and gluten-free diets, highlights the need for future professionals in nutrition, gastronomy, and food technology to develop competencies in planning nutritionally adequate menus. The aim of this study was to assess students' experiences and attitudes towards planning menus for alternative diets and to identify the key nutritional challenges involved in this process.

The study was conducted on a sample of 63 students using an anonymous questionnaire. The results showed that 60.3% of the participants had no previous experience in planning menus for alternative diets. Gluten-free (3.84 ± 1.14) and vegan menus (3.71 ± 1.21) were perceived as more challenging to plan than vegetarian menus (2.59 ± 1.17). As many as 69.8% of the students identified ensuring the nutritional adequacy of vegan diets as the greatest challenge. The nutrients most frequently identified as challenging were protein (68.3%), vitamin B12 (41.3%), iron (30.2%), and calcium (28.6%).

The findings indicate that planning nutritionally adequate menus for alternative diets represents a significant professional challenge, particularly in ensuring an adequate intake of specific nutrients. Although well-planned alternative diets can meet the nutritional needs of different population groups, their successful implementation requires a thorough understanding of the nutritional characteristics of foods, principles of dietary planning, and current evidence-based recommendations. These findings highlight the need to strengthen students' practical competencies in planning nutritionally adequate menus for alternative diets while fostering a critical approach to evaluating their benefits and limitations in professional practice.

Keywords: *alternative diets, meal planning, nutritional adequacy, nutrition education, students*

The Correlation Between Health Literacy and Parents' Attitudes Towards Child Vaccination

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A correlational survey was conducted (April–May 2025) via an online questionnaire distributed to kindergartens in Serbia ($n = 379$ parents, children aged 1–7 years). The European Health Literacy Survey Questionnaire Short Form (HLS-EU-Q16) and the Vaccination Attitudes Examination (VAX) Scale were used. Pearson correlation analysis revealed a statistically significant positive correlation between parental health literacy and vaccination attitudes ($r = 0.192$, $p < 0.001$), indicating that higher health literacy is associated with more positive attitudes towards vaccination. Parents with higher health literacy more easily access relevant vaccination information and form positive attitudes. Improving parental health literacy can effectively reduce vaccine hesitancy.

Keywords: *health literacy, vaccine hesitancy, parents, childhood immunisation*

Incorporating Lifestyle Medicine in General Practice Training

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This narrative review (31 articles, PubMed, Medline, Cochrane) examines the integration of lifestyle medicine within general practice training and clinical education for chronic disease management. General practitioners are crucial in delivering evidence-based interventions related to physical activity, nutrition, obesity management, sleep, substance avoidance, social connectivity, and stress

management. Implementation challenges include time constraints, resource limitations, knowledge deficits, and an absence of standardised lifestyle medicine curricula. Effective integration requires enhanced provider training, appropriate institutional support, and patient-centred collaborative approaches. Strategic investment in provider training resources and curriculum development could substantially reduce the burden of chronic diseases through evidence-based lifestyle interventions.

Keywords: *education, general practice training, chronic disease prevention, medical curriculum, lifestyle medicine*

On Design and Actuation of Nanorobots for Biomedical Purposes

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As a development within nanotechnology, micro/nanorobots have shown significant application potential in medicine as well, where diagnostic and therapeutic demands are of primary interest. This short review begins by enumerating the factors that influence the design and actuation of micro/nanorobots for biomedical purposes, such as current actuation mechanisms, production technologies, materials used and biomedical application areas. The significance of smart materials, closely connected with production technologies, is stressed. The review then presents: (1) the design and working principles of chemically actuated micro/nanorobots, especially those actuated by self-diffusiophoresis, self-bubblephoresis, self-electrophoresis and self-interfacial tension gradient phoresis; (2) the design and working principles of light-actuated, magnetically actuated and ultrasound-actuated micro/nanorobots; and (3) the design and preparation of a biohybrid robot based on an erythrocyte as the biological material. It can be concluded that the design of micro/nanorobots requires individual evaluation of each particular biological situation in order to decide on relevant materials and actuation methods. The creation and use of micro/nanorobots in medicine will grow into a significant research topic in the coming years. Many obstacles still need to be overcome before clinical translation takes place, so there is a clear need to build educational capacities in support of this field.

Keywords: *nanotechnology, robots, biomedicine, design, actuation*

Impact of Microplastics on Human Health and the Importance of Their Recycling

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Microplastics, defined as synthetic polymer particles smaller than 5 mm in size, represent one of the most widespread and least controlled environmental pollutants of the modern era. The rapid industrial expansion of plastic production has resulted in the detection of microplastic particles in all environmental compartments, as well as within the human body. This paper systematically summarises current scientific evidence regarding the sources, routes of human exposure, and mechanisms underlying the toxic effects of microplastics on human health, with particular emphasis on the gastrointestinal, respiratory, cardiovascular, reproductive, and endocrine systems. Microplastics have been detected in human blood, the placenta, lung tissue, testes, breast milk, and the colon. Special attention is given to the role of microplastics as carriers of endocrine-disrupting chemicals. A separate section is devoted to plastic recycling technologies, including mechanical, chemical, and biological recycling, as well as the efficiency of microplastic removal in wastewater treatment plants. Available data indicate that wastewater treatment processes remove between 80% and more than 99% of microplastic particles. However, they remain significant point sources of microplastic contamination in aquatic environments. It is concluded that, although current scientific evidence has not yet established definitive causal relationships between microplastic exposure and specific human diseases, the existing evidence regarding their widespread occurrence, bioaccumulation and mechanisms of toxicity supports the application of the precautionary principle. Plastic recycling represents a key strategy for reducing future microplastic contamination of the environment and minimising human exposure.

Keywords: *microplastics, human health, toxicity, recycling technologies, precautionary principle*

Challenges and Perspectives of Digital Competencies in Nursing Education

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The rapid digitalisation of healthcare systems has transformed the roles and responsibilities of healthcare professionals, placing digital competency at the centre of contemporary nursing practice and education. This narrative review (PubMed, Scopus, Web of Science, Google Scholar, 2019–2026) examines the current state of digital competencies among healthcare professionals with particular focus on nurses. Findings indicate that while digital technologies including electronic health records, telemedicine, mobile health applications, and AI offer significant benefits, their effective application depends on the digital literacy of healthcare workers. Studies report fragmented understanding of digital health among nursing students, insufficient integration of digital competencies into educational programmes, and resistance due to inadequate training. The N.U.R.S.E.S. framework and active learning approaches including simulation and escape room methodologies show promise as educational interventions.

Keywords: *digital competencies, nursing education, digital health, artificial intelligence, healthcare professionals*

Mentoring and Coaching as a Way of Managing Millennials in Healthcare

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This study investigates mentoring and coaching as core leadership practices in modern healthcare organisations. In healthcare, effective mentoring and coaching shape clinician development, team coordination, and patient outcomes, while addressing Millennial (Generation Y) expectations for feedback, learning, and work-life balance. The main aim was to synthesise conceptual definitions, roles, and frameworks of mentoring and coaching within healthcare contexts; to identify how these practices support professional development and improve patient care; and to propose educational implications for integrating mentorship and coaching in medical education, hospital systems, and continuous professional development. The methodology was a narrative literature synthesis drawing on foundational models of mentoring and coaching, healthcare-specific leadership and workforce studies, and Millennial workforce research. The analysis integrates the four-stage mentoring lifecycle, coaching as a relationship-based development process, and evidence on intergenerational dynamics in clinical settings. Main findings: Mentoring in healthcare encompasses psychological/social and professional guidance that supports professional identity and career advancement, while coaching concentrates on individualised, skill-based performance with direct implications for patient safety and quality. Millennials' preferences for regular feedback, collaborative learning, and technology-enabled communication align with reverse mentoring and mentorship teams. In healthcare, well-structured programmes enhance clinical competencies, interprofessional collaboration, and adherence to evidence-based practices, thereby supporting better patient outcomes. Conclusion: Healthcare organisations should embed structured mentoring/coaching ecosystems with regular feedback loops, cross-disciplinary pairing, and opportunities for innovative contribution. Educational implications include training mentors and coaches in clinical emotional intelligence, reflective practice, and micro-mentoring techniques; fostering mentorship teams across specialties and integrating reciprocal learning to accelerate improvement in patient care.

Keywords: *mentoring, coaching, healthcare leadership, professional development, patient outcomes*

From Anatomy to Experience: The Educational and Tourism Potential of the Anatomical Museum in Novi Sad

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Contemporary tourism and higher education are increasingly aligned towards authentic, experiential, and technology-enhanced learning models that bridge scientific knowledge with public engagement. Medical heritage remains a unique yet frequently underutilised asset with significant potential for

creating innovative tourism products, fostering informal learning, and diversifying destination offerings. While anatomy has traditionally been confined to the formal academic environment, modern museological concepts and digital interpretation methods provide a viable framework for its integration into special-interest and educational tourism. This paper examines the tourism and educational valorisation of the Anatomical Museum at the Department of Anatomy, Faculty of Medicine, University of Novi Sad. The objective is to evaluate how medical heritage can be transformed into an innovative tourism product that enhances the destination's cultural and academic appeal. Utilising a methodology based on a case study and a comparative analysis of international best practices, the research evaluates the structural, technological, and interpretive capacities of the museum's collection. The findings indicate that combining valuable traditional anatomical exhibits with cutting-edge technologies – specifically advanced plastination techniques and the interactive *3D Anatomage table* – alongside high-level academic expertise, forms a solid foundation for experiential tourism models. These resources enable the development of interactive museum displays, thematic tours, and interdisciplinary educational programmes tailored to medical students and professionals, tourists and the local community. By synthesising medical science, modern technologies, and innovative interpretation, this approach diversifies the tourism offer of Novi Sad, promotes cross-sectoral collaboration between academia and the tourism industry, and advances regional competitiveness in educational tourism.

Keywords: *tourism innovation, medical heritage, anatomical museum, educational tourism, Novi Sad*

Pharmacist-Led Nutrition Education in Type 2 Diabetes Management

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Type 2 diabetes mellitus (T2DM) represents a major public health challenge due to its increasing prevalence, substantial impact on quality of life, and growing burden on healthcare systems. Medical nutrition therapy and patient education are essential components of effective diabetes management and long-term disease control. This review aimed to analyse the importance of nutrition education in T2DM management, with particular emphasis on the role of pharmacists in supporting dietary self-management and multidisciplinary diabetes care.

This narrative review was based on the analysis of relevant scientific literature from the fields of medical nutrition therapy, diabetes care, and clinical pharmacy. Literature searches were conducted in PubMed/MEDLINE, Scopus, and Google Scholar, including systematic reviews, meta-analyses, clinical studies, and international guidelines addressing nutrition education, pharmacist-led interventions, and diabetes management.

The reviewed evidence indicates that structured and individualised nutrition education improves patients' understanding of diabetes, promotes healthier lifestyle behaviours, and contributes to better metabolic outcomes. Pharmacist-led interventions, including patient counselling, reinforcement of dietary recommendations, lifestyle modification support, medication adherence monitoring, and identification of therapy-related problems, have demonstrated beneficial effects on glycemic control and self-management skills. Pharmacists represent valuable members of multidisciplinary diabetes care teams by providing accessible, continuous education and supporting the implementation of medical nutrition therapy recommendations.

The integration of pharmacists into structured diabetes education programmes may enhance continuity of care, improve patient engagement, and contribute to more effective long-term management of T2DM.

Keywords: *type 2 diabetes mellitus, medical nutrition therapy, nutrition education, pharmacists, diabetes self-management*

The Importance of Continuous Education for Healthcare Workers in Medical Waste Management

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According to the World Health Organization (WHO), medical waste generated from healthcare facilities, research centres, and laboratories consists of 10%–25% hazardous and 75%–90% non-hazardous materials. If improperly treated, hazardous waste poses severe risks to human health and the environment due to potentially harmful microorganisms that can transmit serious illnesses to healthcare personnel, patients, and the general public. To minimise these health risks, building awareness through targeted communication and educational methods is essential. A major portion of difficulties in waste management stems from a deficit in understanding safe disposal practices, highlighting that the knowledge, mindset, and behaviours of healthcare personnel are pivotal for successful coordination. To examine the knowledge, attitudes, and practices of healthcare workers, an observational, descriptive, cross-sectional investigation was conducted in primary healthcare facilities in the Mačva district. Data were collected using a questionnaire during December 2025. The results demonstrate that while the practices of health workers on medical waste management were generally satisfactory, there is still a need for continuous education. Based on the results obtained in this study, it is recommended that in addition to regular and mandatory training programmes more practical and interactive forms of education be introduced, alongside enhanced supervision and control, in order to minimise risks and enable safe and sustainable medical waste management practices.

Keywords: *medical waste, waste management, healthcare workers, continuing education*

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