

Coordinator:
Alina-Cerasela Avram

Abstracts of the 16th edition of the Romanian International Conference for Education & Research

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Innovative Approaches in Medical Education for Family Medicine: Trends, Challenges, and Perspectives in Romania

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Abstract

Family Medicine represents a cornerstone of healthcare delivery, requiring a solid educational foundation that integrates clinical knowledge, communication, prevention, and continuity of care. In Romania, the continuous evolution of academic requirements and healthcare needs has stimulated a reassessment of medical education approaches, particularly in the context of European integration and global health challenges.

This study evaluates current trends in Family Medicine education in Romania, with a focus on competency-based curricula, digital platforms, and interprofessional training, aiming to identify innovative directions and existing challenges.

A mixed-methods approach was adopted, consisting of a review of national curricula and policy documents, analysis of European recommendations, and a cross-sectional survey involving 126 family medicine residents and 42 academic trainers from five Romanian medical universities. Quantitative data were analysed descriptively, while qualitative responses underwent thematic coding to identify recurrent patterns.



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The results highlight a gradual but steady transition towards competency-based training, with an increasing emphasis on clinical reasoning, patient-centered care, and preventive strategies. E-learning platforms and case-based simulations were perceived as valuable, especially during and after the COVID-19 pandemic. Respondents stressed the necessity of integrating telemedicine, health promotion, and communication skills into teaching. However, significant barriers were noted, such as uneven access to digital infrastructure, limited simulation resources, and insufficiently structured mentorship programmes.

Family Medicine education in Romania is currently aligning with European standards while addressing local healthcare realities. To enhance the preparedness of future physicians, investment in digital competencies, interprofessional learning, structured mentorship, and continuous assessment tools is essential. By bridging these gaps, Family Medicine can remain a dynamic discipline, capable of responding effectively to the evolving health needs of patients and communities.

Keywords: Family Medicine, medical education, competency-based curriculum, digital learning, Romania, interprofessional training.



Increasing the Level of Education of the Younger Generation through Theatre

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Abstract

Theatre is an integrative art form, with the capacity to support human development and the process of building skills for personal fulfilment and growth. The provision of theatrical education has been demonstrated to facilitate social integration and active participation in society. Furthermore, it has been shown to promote the formation of a concept of life based on humanistic and scientific values, national and universal culture, and the stimulation of intercultural dialogue, respect for dignity, tolerance, and fundamental human rights and freedoms. Theatre has been demonstrated to engender sensitivity to human issues, moral and civic values, and the promotion of sustainability and respect for the natural, social, and cultural environment.

In the contemporary educational landscape, the integration of theatre in education has emerged as a compelling strategy to cultivate a well-rounded, dynamic learning environment. Theatre, with its rich tapestry of creativity, collaboration, and critical thinking, offers unique opportunities to enhance traditional educational methodologies. The integration of theatrical practices into the curriculum has been demonstrated to enhance the learning experience and address the holistic development of students, preparing them for the complexities of modern life.

The initiative to educate young people through theatre is a welcome one. It is aimed both at universities and faculties that offer programmes in theatre and the performing arts in Romania, as well as theatres that may have educational programmes dedicated to teenagers. The recent



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introduction of theatre education in high schools, in conjunction with music and visual education, will facilitate the employment of graduates from relevant faculties in pre-university education. Furthermore, the enhancement in the level of education of adolescents will be evident through their engagement with theatre.

The present paper sets out the hypothesis that an increase in the level of education of the younger generation is to be achieved through the medium of theatre.



Mapping TikTok Adoption in Romanian Universities: A Comparative Analysis of Social Media Communication Strategies Across Public and Private Universities

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Abstract

This study analyses the adoption of TikTok as a communication tool among Romanian universities, addressing a gap in understanding how Romanian universities use the social media platform preferred by Z Generation for institutional communication and student engagement. We conducted a systematic review of a total of 85 accredited higher education institutions (52 public and 33 private), aiming to map TikTok adoption rates, identify content strategies, and evaluate engagement metrics across different institutional types. Our analysis targeted official university TikTok accounts, where we categorized content types and we measured engagement indicators including views, likes, and comments. We further compared engagement levels between public and private institutions to highlight differences in visibility and communication style.

Our findings reveal that while TikTok adoption remains uneven, institutions that adapt to platform culture (e.g., use of trending audio, short storytelling, or humorous formats) achieve higher engagement. The results underline TikTok's growing role in higher education branding, recruitment, and digital visibility, while also revealing opportunities for more structured strategies in Romanian academia. Findings provide practical insights for university



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administrators developing social media strategies and theoretical implications for understanding institutional communication in the digital age.

Keywords: TikTok, Romanian universities, higher education, communication, social media marketing, students' engagement



Adapting Students' Learning Styles Using Artificial Intelligence in Learning Computer Science Concepts and Developing Educational Robots

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Abstract

By integrating artificial intelligence, this paper presents a method designed to help students learn more efficiently, benefiting from personalized education in algorithms and educational robot programming, which has enhanced the potential of each student. Adapting to current learning needs as well as for the baccalaureate exam, artificial intelligence was used as a study support to provide educational information, detailed explanations, and guide students through the steps to obtain clearer, more learning-oriented answers.

Keywords: artificial intelligence, computer science concepts, educational robots, haptic devices, personalized active learning

JEL Classification: C63, C69, I21, I26, I29.



Communication Barriers in Technical Faculties

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Abstract

Effective communication is a fundamental skill in all sectors and is very important for academic and professional success. In higher education, especially in technical fields, it faces unique challenges. This paper investigates and analyzes the main communication barriers experienced by students from a technical faculty, both in their interactions with teachers and with their colleagues. A custom-designed questionnaire was applied to 125 students from different domains from a technical faculty. Beyond general comfort and frequency of communication, the instrument included questions to identify their problems from multiple categories: linguistic barriers, environmental barriers, perceptual/positional barriers (fear of judgment, status differences), and conceptual barriers (preconceptions, misinterpretation of messages). These options were based on classic models of communication breakdown and adapted to the academic context. The analysis revealed that many students do not feel fully comfortable engaging in dialogue with their teachers and there are many barriers in this process. In contrast, in the case of their colleagues, communication is much easier and more relaxed, with fewer obstacles. This paper highlights the importance of addressing communication barriers not only as interpersonal issues but as structural challenges in the educational process. These not only affect the quality of academic performance and collaboration but also influence students' confidence and motivation to participate actively in learning experience.

Keywords: communication barriers; higher education; student-teacher interaction; student-student interaction technical faculty



Perceived Stress, Basic Psychological Needs, and Quality of Life among Romanian School Counselors: A Mixed-Methods Study

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Abstract

School counselors face daily complex situations, such as abuse, trauma, and the emotional and relational difficulties of students, as well as pressures from other educational actors (parents, teachers, and the wider school community). These factors can generate high levels of stress, reduce both professional and personal quality of life, and may even lead to suicidal thoughts. The present study investigates the relationship between perceived stress, the satisfaction of basic psychological needs, and quality of life among school counselors. A mixed-methods design was employed. The quantitative, correlational component included 43 school counselors from several counties, recruited through the Regional Centers for Resources and Educational Assistance. The qualitative component consisted of semi-structured interviews with three school counselors. Perceived stress was negatively associated with quality of life ($r = -0.36, p < .05$) and positively associated with frustration of psychological needs ($r = 0.39, p < .001$). Satisfaction of psychological needs showed a strong positive association with quality of life ($r = 0.85, p < .001$), explaining 73% of its variance. School counselors exhibit high levels of stress that significantly impact their quality of life. The satisfaction of basic psychological needs is an essential factor for maintaining well-being and professional balance. Study limitations include the small sample size and the subjective nature of self-report measures.

Keywords: school counselor; stress; basic psychological needs; quality of life; mixed-methods design.



Online Teaching Strategies for Nursing Students: Challenges and Opportunities

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Abstract

The COVID-19 pandemic has transformed global education systems, with nursing education being among the most affected disciplines due to its dual reliance on theoretical instruction and clinical practice. This study examines the challenges and opportunities associated with the accelerated adoption of online teaching for nursing students. Through a mixed-methods literature review published between 2020 and 2025, the paper highlights both the potential and the limitations of e-learning in nursing.

Key advantages of e-learning include accessibility, flexibility, and innovation which enable continuity of learning regardless of geographical location or time constraints. The integration of digital tools, such as virtual patient simulations and online case studies, has provided innovative opportunities to strengthen both theoretical and clinical knowledge. Nevertheless, there're significant reductions in opportunities for direct clinical practice, unequal access to digital resources, and diminished interpersonal interaction.

The findings suggest that blended learning an-approach combining online education with supervised, clinical training-offers the most effective and sustainable model for nursing education in the post-pandemic era. Recommendations include expanding investment in digital infrastructure, incorporating high-quality simulation technologies into nursing curricula, and ensuring comprehensive faculty development in e-learning pedagogies. Ultimately, online learning should be regarded not as a replacement but as a complementary strategy that enhances traditional nursing education.

Keywords: online teaching, nursing education, virtual simulation, blended learning, clinical skills



Optimizing EFL Listening Proficiency Through Technology-Mediated Instruction

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Abstract

Listening comprehension remains a persistent challenge for English as a Foreign Language (EFL) learners, often hindered by complex phonological features, unfamiliar vocabulary, varied speech rates, and diverse accents. This study investigates the effectiveness of technology-enhanced instructional approaches in improving listening skills among university-level EFL students. Two primary strategies were examined: (1) the use of authentic listening materials integrated with communicative tasks, and (2) the implementation of technology-assisted tools, including language learning applications, podcasts, and multimedia resources. Employing an experimental design with control and treatment groups, data were collected via pre- and post-tests, learner questionnaires, interviews, and classroom observations. Results indicate significant improvements in listening comprehension across both interventions. Authentic materials foster contextual and cultural awareness, while communicative activities promote engagement and active listening. Technology-supported tools enable flexible, self-paced practice and increased exposure to diverse spoken input. The study highlights the pedagogical value of integrating context-rich, learner-centered, and technology-mediated strategies in EFL listening instruction.

Keywords: EFL Listening Comprehension, Technology-Assisted Language Learning, Authentic Listening Materials, Communicative Language Teaching, Language Pedagogy.



Developing Research Skills of Students

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Abstract

The study aimed to understand FPSE students' perceptions of their own research skills, areas of interest, and difficulties encountered in educational research, as well as to identify opportunities for capitalizing on the results of the research conducted during university studies. Using a questionnaire with closed items, the investigation included 300 undergraduate (second year) and master's students (first and second years), who reported participating in educational research primarily within the Research Methodology course (75.6%), addressing topics such as curriculum, instruction and assessment theory, the education of children with SEN, and other areas, generally without further valorization of their work. The findings show that 75.6% of students capitalized on their research results exclusively within the Research Methodology course, while only 12.2% presented their results within methodological committees in schools or at conferences (4.9%). The main benefit perceived was preparation for the completion of bachelor's or dissertation theses (63.4%), followed by the consolidation of theoretical training (14.6%) and, to a lesser extent (9.8%), the identification of scientific solutions to professional problems. The major difficulties reported included balancing work responsibilities with research activities (61%) and challenges in identifying research participants (24%).

Keywords: research skills, innovative initiatives in education, academic visibility



Directions and Emerging Trends in Teacher-Led Research on the Development of Communication Competences in Early Childhood and Primary Education

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Abstract

For teachers in pre-university education, the teaching career includes professional development stages marked by teaching degrees: second degree and first degree. The first degree certifies the practice of teaching at an advanced level, on a consistent basis, including teaching based on the exchange of good practices, reflection, and creativity, as well as showing interest in certain aspects of school practice which, through authentic and detailed understanding, can be improved. Thus, educational and psychological research provides the framework for the scientific investigation of educational phenomena.

This study highlights the topics of interest addressed by primary and preschool teachers in the methodological-scientific papers prepared for obtaining the first degree, with a focus on the formation and development of communication competences in children and pupils. In the early cycles of education (preschool and primary), the development of communication competences represents a major goal of the educational process, in accordance with the National Curriculum. Oral and written expression skills, active listening, dialogue, the use of nonverbal language, and the development of digital communication are key benchmarks for the harmonious development of the child.

The sample of our investigation consists of 149 papers written by preschool and primary school teachers during the period 2017–2025, in which we identified the main areas of interest, the most



frequently used methodologies, strengths and thematic gaps, and proposed priority directions for future research.

The research objectives were:

1. to identify the main themes addressed in studies on communication carried out by primary and preschool teachers.
2. to analyze the research methods and instruments used in these works.
3. to determine the frequency and thematic trends depending on the level of education (primary vs. preschool).
4. to formulate recommendations for applying research results in educational practice.

The content analysis was carried out using a grid that included the following indicators: research theme, research objectives, methodology used, targeted level of education (primary/preschool), and results/recommendations formulated.

The formation of communication competences in preschool and primary school children represents the foundation of the educational process, serving as the basis for all other areas of learning. Research conducted by teachers in their first degree papers demonstrates an increasing interest in the linguistic, socio-emotional, and digital dimensions of communication. However, there remains a need for more rigorous studies and an expansion into new themes.

Keywords: educational research, research topics, communication competences, primary and preschool education



Inclusive Learning: The Antipa Museum for Neurodiverse Children

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Abstract

This article examines the programs designed for neurodiverse audiences developed by the Grigore Antipa National Museum of Natural History in Bucharest. Framed within the theoretical context of Disability Studies and informed by relevant legal frameworks, the analysis situates the museum's activities in relation to inclusive practices implemented by contemporary European and U.S. museums. The study pursues two main objectives. First, it investigates the availability, structure, and specific features of educational programs targeting neurodiverse children and young people at the Antipa Museum. Second, it shows the degree of interest and engagement demonstrated by the target audience in response to these initiatives. By addressing these objectives, the article contributes to a broader understanding of how cultural institutions can design and implement inclusive educational strategies that respond effectively to the needs of diverse audiences, while also aligning with international accessibility standards and theoretical developments in the field of disability and museum studies.

Keywords: disability studies, neurodiversity, museum, inclusion



Arduino as an Educational Tool for Exploring Medical Signals

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Abstract

These days, gadgets of various kinds are an essential aspect of everyone's life. All these smart devices, whether they are watches, phones, rings, or wristbands, are built on basic sensors that allow us to continuously monitor our body temperature, heart rate, blood oxygen saturation, or sleep quality. There are numerous accessible, simple alternatives to these sensors, such as Arduino-compatible modules, which, configured properly, can build effective continuous monitoring systems. Students in the Faculty of Medical Engineering learn the fundamentals of medical electronics, which they can use in the class projects, bachelor's thesis, or at work. Since signal processing is the foundation of most applications and devices for monitoring vital parameters, this study proposes including a medical signal acquisition laboratory in the Arduino classes. In the theoretical section, students interactively discover medical signals, and then, in the practical section, they acquire, visualize, and measure them. To ensure the accuracy of the obtained signals, an advanced medical signal acquisition system, Biopac, is also used, and the outcomes are compared both visually and numerically.

Keywords: Medical signals, Laboratory classes, Arduino, Heart rate, Muscle contraction, Wearable sensors



An Exploratory Study on the Use of Augmented Reality (AR) in Medical Education

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Abstract

The use of digital technology in the teaching and learning process has grown significantly in recent years. Augmented reality (AR) is a technology/software that allows the digital creation of three-dimensional representations that can be integrated with real stimuli in the environment. It is an interactive, real-time experience that combines reality with elements from the virtual world, leading to an augmented reality enriched with virtually generated information, based on human visual, auditory, olfactory and/or somatosensory input. The result is an image of reality modified by a computer program, which aims to improve the real-world experience, but does not replace the real world. It is not a 360° virtual world, but makes reality more manageable, amplifies it, mapping three-dimensional virtual objects in a real environment. Such AR programs can be used on various devices such as: smartphones, tablets, computers, AR glasses, headsets, etc.

Even though augmented reality (AR) was initially used for entertainment and gaming, its application has expanded into industry, healthcare, marketing, military, travel, architecture and engineering, but also in the medical education of students in medical schools. So far, we have not found global or regional statistics on the degree of use of AR in medical education, but there are a number of universities that use AR platforms or others that implement pilot studies or isolated modules. We have not identified any large-scale implementations or fully integrated implementations into core curricula. The obstacles to adopting this technology in medical education are mainly related to the high costs of implementing AR technology, the lack of



adequate infrastructure in universities, the need to train teachers in the use of AR technology, access to technology (hardware).

The present paper is a theoretical-exploratory one in which we analyze a series of articles, identified through the associated search of 3 keywords, in different scientific databases, namely: "digital learning methods", "medical students" and "augmented reality". In this paper, we analyze to what extent AR can improve the learning experiences of medical students, through practical understanding and skills training, with examples of software already used in didactic training, such as: HoloHuman, OculAR SIM, Hololens, HoloPatient. Finally, we discuss the challenges of AR in learning and teaching, limitations in implementation, and propose future research directions.

In Romania, two universities stand out that implement AR technology in medical education, namely: the "Iuliu Hațieganu" University of Medicine and Pharmacy in Cluj-Napoca, which had a project to develop AR simulators for laparoscopic, robotically assisted, single incision surgery, using Hololens 2, and the University of Medicine, Pharmacy, Sciences and Technology in Târgu Mureș, which within the Center for Simulation and Practical Skills has a department dedicated to "Virtual and Augmented Reality". In Europe there is growing interest, through pilot projects and elective courses, involving AR, but it is not yet a widespread use in standard curricula at all medical schools. Worldwide, the adoption of AR technology in medical education is taking place especially in highly prestigious universities with good financial resources. Finally, as a case study, we focused on Romania. We conducted a search on the official websites of the eleven major universities in the country that provide education and training for future medical professionals, with the aim of identifying programs or any references related to the use of AR technology in their medical education curricula. The findings for Romania reveal that among the eleven universities providing medical training programs, only five have established simulated learning centers employing VR technologies for students, whereas one university has initiated two minor VR technology acquisition projects within the last two years. *Conclusion.* In the field of medical education, the adopting of augmented reality (AR) could provide both students and



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teachers with significant advantages, including a stimulating learning environment, immersive practical experience, and opportunities for distance learning.

Keywords: augmented reality, medical education, digital technology, teaching methods, students, learning



Combat Mindset (CoMind): from an innovative project to a mandatory discipline

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Abstract

The article presents the evolution of the Combat Mindset Training for Romanian Military Students (CoMind) approach within “Henri Coanda” Air Force Academy in Brasov. Mental preparation for the battlefield is a tactical necessity for any category of armed forces and, for its inclusion in a curriculum that requires approval from the Ministry of National Defense, it needed a rigorous scientific substantiation. CoMind was the central theme of an inter-institutional cooperation project funded by EEA and Norwegian grants, as an optional training module conceived in an interdisciplinary manner (through the contribution of neuroscience, cognitive psychology, social psychology and martial arts). Taking over the model of good practices from the Norwegian cultural environment, adapting it to the conditions of the cultural environment and military organizational culture in Romania and implementing it, especially regarding mental preparation for battlefield or Combat Mindset (CoMind) as a subject or module, first optional, then mandatory, in the curriculum of “Henri Coanda” Air Force Academy, meant a long process, which, fortunately, can serve as a model of good practices regarding the implementation of research results in the higher educational process (BA degree)

Currently, CoMind is both a mandatory discipline and a research paradigm, embodied in scientific articles and communications and as the topic of bachelor's/dissertation theses.

Keywords: combat mindset (CoMind); mindset training; military students; military higher education; curriculum



Kioi Seidō – The Architecture of Education: A Building that Teaches Without Teaching

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Abstract

Education has never belonged solely to classrooms. Architecture, as one of society’s most pervasive yet overlooked teachers, silently shapes behavior, values, and perception through space, light, and material. This paper examines Hiroshi Naitō’s *Kioi Seidō* (2022, Tokyo) as an architectural pedagogy -- a building designed “without purpose” that resists the dominance of utility, productivity, and profit. Through its spatial sequence—from dark, compressed entry to luminous atrium—*Kioi Seidō* dramatizes education as transformation: a journey from disorientation to insight.

Drawing connections to Dewey, Freire, and Montessori, the project exemplifies how architecture can embody problem-posing pedagogy, cultivate reflection, and position environments as active teachers. It also resonates with Japan’s cultural lineage of Shinto shrines, Zen gardens, and tea houses, which educate through atmosphere and ritual rather than instruction. At the same time, its refusal of fixed function raises ethical debates about privilege, responsibility, and sustainability in a city of scarcity.

By situating *Kioi Seidō* alongside global precedents such as Ronchamp, the Salk Institute, and the Vittra Telefonplan School, this paper argues that the building is neither sanctuary, nor school, nor monument, but a deliberate anomaly - an architecture of ambiguity. In doing so, it reminds us that built environments are never neutral: they teach discipline, consumption, control, or, in this rare case, openness, humility, and interpretive freedom. *Kioi Seidō* demonstrates that architecture itself can be a form of pedagogy, expanding education beyond curricula into the spaces of everyday life.



A New Approach to Interactive Education: Game Engine-Based Frameworks for Teachers to Develop Interactive Lessons

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Abstract

Recent studies in the field of education show a significant increase in students' level of concentration during classes when the learning experience is highly immersive. During lessons, students are engaged with immersive instructional materials, whether through exercises or video presentations. On average, this results in better information retention and a deeper understanding of the subject matter. Existing applications, whether in VR or in 2D/3D for computers and mobile devices, already offer rich curricula that approach abstract topics through practical student experiences.

This article introduces a new approach to creating teacher-centered interactive educational applications. In conventional applications, teachers must find the software that best fits their course, and in some cases, they must even adapt their existing teaching materials to align with



the chosen application. To address these challenges, this paper proposes a framework based on a game engine (Unity or Unreal Engine) that enables teachers to design interactive lessons through intuitive interfaces. These panels contain blocks representing sample lessons or educational scenarios, which teachers can modify via drag-and-drop to match their own instructional content. Furthermore, the article outlines a system for collecting student performance data during lessons. At the end of each session, students may also provide feedback, enabling teachers to refine and improve their lessons based on results and reviews.

The proposed framework aims to increase teacher autonomy, lesson customization, and student engagement in immersive learning environments.

Keywords: interactive education, game engine, ICT