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Scientific Conference
ICT in Life

Forging Tomorrow

Book of Abstracts

Editors: Ivana Đurđević Babić and Vjekoslav Galzina

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Unlocking Potential, Addressing Pitfalls: Artificial Intelligence in the Evolving Classroom

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Abstract

The integration of artificial intelligence (AI) tools, exemplified by ChatGPT, into educational settings presents both thrilling opportunities and daunting challenges. This keynote presentation explores the advancing landscape of AI-driven education, emphasizing the potential for extended and enriched learning experiences while emphasizing the indispensable need for a responsible approach to implementation. The presentation we will highlight into the multifaceted ways in which ChatGPT and similar AI technologies can revolutionize the educational landscape. From personalized learning experiences to real-time feedback mechanisms, these tools hold the promise of enhancing both teaching and learning processes. Through insightful demonstrations and case studies, attendees will gain a comprehensive understanding of how AI can empower educators and students alike, fostering creativity, critical thinking, and engagement in the classroom.

However, amidst the excitement of technological advancement, it is imperative to address the misused, limitations, and the ethical and practical considerations inherent in the integration of AI in education. This presentation will shed light on the nuanced complexities associated with responsible implementation. By examining potential risks and pitfalls, attendees will be equipped with the knowledge and strategies necessary to navigate the evolving landscape of AI-driven education with confidence and foresight. This keynote presentation serves as a call to action for educators, researchers, leaders, policy makers, and other stakeholders to embrace the transformative power of AI in education while upholding ethical principles and safeguarding against potential pitfalls. By fostering a culture of responsible innovation and collaboration, we can harness the full potential of ChatGPT and similar AI tools to create a more inclusive, equitable, and empowering educational experience for all.

Keywords: Artificial Intelligence, ChatGPT, Education, Responsible Implementation, Ethical Considerations, Personalized Learning, Collaboration.

Modelling human behaviours and characteristics with Artificial Intelligence

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Abstract

Artificial Intelligence was "born" in the 1950s, with the ambitious goal of emulating human intelligence. The premise, expressed by Alan Turing in his 1950 seminal paper, *Computing Machinery and Intelligence*, was that humans apply reasoning to available information to solve problems and make decisions and that machines could do the same thing. As we know, this proved to be a much more difficult task than initially thought. Artificial intelligence as a computer science field, has seen ups and downs, as well as interesting shifts in its focus. One of the most interesting shifts for me personally is the move from working with accepted knowledge or facts towards modelling human behaviours and characteristics, or, in other words, the move from the objective to the subjective.

Humans are fascinating creatures; philosophers and scientists have sought to understand what it means to be human in the world we find ourselves in. As our world changed with the arrival of the computer, so changed our capacity to store data about ourselves, which opened the possibility and interest in modelling our own behaviours and characteristics, for a variety of reasons such as a better understanding of what it means to be human, support decision making in complex problems, modelling social systems and economic gain.

The modelling of human behaviour and characteristics can be divided into two broad approaches: (a) data-driven and (b) theory-driven. An intuitive example of both approaches is the way retailers may recommend to us products to buy or try to incentivise us to spend more. A recommendation for a product based purely on your purchase history is a data-driven approach while recommending products based on what other similar people bought or by using tactics such as discounts and buy-one-get-one-free are theory-driven approaches, informed by theories from psychology, sociology and economics.

In this talk, I will focus on the second approach, i.e., theory-driven modelling, and, in particular, on modelling subjective phenomena such as microaggressions, suicide, misogyny, sarcasm, polarity and emotions. Drawing from others' research, as well as my own in the past 18 years,

I will attempt to cover not just the modelling approaches, but also the wider context, what the limitations of our knowledge and tools are, and why it matters.

Keywords: artificial intelligence, machine learning, user modelling, personalisation, human behaviour and characteristics

Blending the ECEC Teacher Training Program: Digital Learning Environments as Places of Integrated Learning

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Abstract

Early Childhood Education and Care (ECEC) constitutes a critical stage in a child's developmental journey, shaping their cognitive, social, and emotional growth. In recent years, the landscape of ECEC has been undergoing transformation, influenced by lack of teaching staff in many European countries and through advancements in digital technology. This study focuses into the paradigm shift in ECEC teacher training programs, through for the integration of digital learning environments to enhance pedagogical competencies. This study is conducted in a blended teacher training program 1000+ where the teacher students' study and work in the field of ECEC simultaneously.

Traditional ECEC teacher training programs have relied on conventional methods, often overlooking the potential of digital tools in enriching educational experiences. However, the emergence of digital learning environments presents an opportunity to critically evaluate teacher training paradigms. By incorporating digital technologies, teacher trainers can scaffold a dynamic and immersive learning ecosystem, addressing the varied needs and learning preferences of future teachers. Central to this paradigm shift is the concept of integrated and dynamic learning, wherein digital tools are seamlessly woven into educational practices. Through a blend of theoretical knowledge and practical application, and online, self-studied, interactive and face-to-face instructions, ECEC teacher training programs can implement digital learning environments to create dynamic learning experiences. By integrating interactive simulations, virtual classrooms, and hand-on practice, future teachers can engage in phenomenon-based learning, develop critical thinking, problem-solving skills, and creativity in both them and children in their working environments. Moreover, digital learning environments serve as catalysts for collaboration and networking among ECEC professionals. Through online forums, virtual communities, and social media platforms, teachers can exchange ideas, share best practices, collaborate on innovative projects, and involve themselves in reflective practices. Furthermore, the integration of digital learning environments in teacher training programs promotes lifelong learning and professional development. By embracing emerging

technologies, teacher trainers embark on a journey of continuous growth and adaptation, and scaffold their student teachers in equipping themselves with the skills and knowledge necessary to navigate the evolving landscape of ECEC.

In conclusion, blending the ECEC teacher training program with digital learning environments holds immense promise in pedagogical practices and fostering holistic pedagogical approach and through that scaffolding the development in children in ECEC centers.

ESP students' attitudes towards using online dictionaries and AI-based tools in language learning

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Abstract

The importance of using dictionaries in learning a foreign language is indisputable. The emergence of online dictionaries and artificial intelligence (AI) has noticeably influenced the way students learn a foreign language and provides fertile ground for implementing AI in education (AIEd). This paper aimed to examine the attitudes and experiences of English for Specific Purposes (ESP) students in the use of online dictionaries and AI-based tools. The students were anonymously surveyed during the winter semester of the academic 2023/2024 year on the types and frequency, reasons for using online dictionaries, advantages and disadvantages of using online dictionaries as well as potential suggestions for improving online dictionaries. They also provided their opinion of and experience in AI tools in learning a foreign language and translation. The findings suggest that the students prefer using bilingual online dictionaries used for checking the meaning of unknown words. They heavily rely on Google Translate, which is the most convenient option for them. The students recognize the potential of AIEd; however, they believe AI tools should only be used as a supplementary material in language learning. On the other hand, AI-based translation tools can be utilized as primary translation tools. The study sheds light on the characteristic behavior of ESP students regarding their online dictionary and AI-based tools use for language learning and translating and points to the need of developing students' digital competence in the realm of online dictionary use as well as encourage them to embrace the technology full potential.

Keywords: ESP students, attitudes, experience, online dictionaries, AI-based tools

Digital resources as an incentive for teacher development

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Abstract

In the modern digital era, online or digital resources are increasingly becoming crucial for the professional development of teachers. Over the past few years, there has been a noticeable growth in diverse online approaches to improvement, including online education, courses, and digital platforms that continuously provide varied content. This paper is based on a literature review to illustrate the impact of the growing trend of using online resources as an incentive for the professional development of teachers, serving as a catalyst for enhancing their knowledge and skills, as well as fostering interconnection and collaboration among them. The paper will particularly focus on identifying the advantages and challenges teachers face during their participation in online training and analyze the influence of such an approach on teacher motivation. Furthermore, the paper will emphasize the importance of adapting traditional models to new trends in professional development. All these aspects aim to contribute to a deeper understanding of the role of online resources in the development of the teaching profession, providing insights into the opportunities that digital education offers for the teaching profession in the 21st century. In a broader context, the general importance of teachers' professional development will be highlighted as a crucial factor in maintaining high education standards. Through continuous investment in professional development via online resources, teachers acquire the necessary knowledge and skills essential for effective teaching.

Keywords: digital resources, online professional development, professional growth, teachers

Teaching English in Multigrade Classrooms in Tuzla Canton

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University of Tuzla, Bosnia and Hercegovina

Abstract

The paper analyses a scope of challenges that English language teachers have in multigrade classrooms. Teaching in multigrade classrooms as a phenomenon when one teacher teaches students of different ages, grades and abilities within one and the same group.

Despite the long history and high prevalence of multigrade classes, research on this topic has been largely neglected. There are five main difficulties that teachers might face: how to use and distribute class time, how to make a quality design of class preparation, how to maintain discipline, how to organize students' independent work, and how to form clear and universal goals for successful work combined class. The aim of this paper is to determine the most common difficulties, as well as teaching method that can be applied to overcome these difficulties.

Keywords: teaching English, multigrade classrooms

Mentimeter's Effect on Cadet Participation and Learning Outcomes in Maritime English

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Abstract

The paper is devoted to the analysis of the use of whiteboards in maritime education and training of cadets of ship engineering department. This research not only highlights the benefits of incorporating interactive whiteboards into maritime education but also provides practical recommendations for educators aiming to enhance environmental awareness among future maritime professionals. It is mentioned that the use of whiteboards offers a promising avenue for bridging the gap between theoretical knowledge and practical application, ensuring that cadets are equipped with the essential skills and awareness needed to navigate the challenges of a rapidly evolving maritime industry while prioritizing environmental sustainability. The findings demonstrate a significant improvement in cadets' understanding of environmental concepts and their ability to apply sustainable practices in real-world maritime scenarios. Cadets expressed higher levels of engagement and motivation when learning through interactive whiteboards, citing the dynamic and immersive nature of the technology as a contributing factor. Moreover, faculty members reported enhanced teaching capabilities and the ability to address individual learning needs more effectively. This work highlights the potential of using whiteboards (e.g. Whiteboard.fi, Miro) as a tool for enhancing environmental awareness and suggests further research to explore its effectiveness in other educational contexts.

Video use in teacher professional development: a literature review of some technical considerations

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Abstract

Teacher professional development (TPD) is a structured form of teacher learning aimed at enhancing their teaching competences, helping teachers introduce changes into their lessons and improve student learning outcomes. Effective TPD is subject-specific; it comprises active and collaborative teacher learning in an interactive community; it lasts long enough and is intense enough to achieve changes in the classroom; it is rooted in adult learning theories; it is tailored to individual teachers' professional needs; it is aimed at understanding student learning; and lastly, it is grounded in lesson analysis, enhanced through the use of classroom videos. Classroom videos play a pivotal role in TPD, allowing teachers to reflect on visual representations of teaching, including real-time interactions, strategies and dynamics within the classroom. The ability to review classroom videos multiple times facilitates an in-depth analysis of specific aspects of instruction, including student thinking, helping teachers identify key areas for improvement. Sharing videos through online platforms enables collaboration and feedback within a broader learning community. This literature review addresses key technical questions related to integrating classroom videos into TPD. These questions pertain to (1) ensuring video quality and availability, (2) determining optimal recording practices, especially the “who” and “how”, (3) identifying effective classroom video types for teacher learning, (4) determining the optimal video count for conclusive lesson quality assessment and (5) addressing challenges and limitations associated with video-based TPD. This paper will provide valuable insights for educators, policymakers and researchers seeking to enhance the quality and impact of TPD programs.

Keywords: classroom videos, lesson analysis, reflection, teacher professional development

Creative use of AI tools in the classroom

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Abstract

The proliferation of Artificial Intelligence (AI) tools in the public domain presents a range of opportunities and challenges for teachers, professional associates and students alike. These tools have the potential to reshape teaching, stimulating creativity through collaborative idea generation. In the context of 21st-century education, creativity emerges as a pivotal skill encompassing problem-solving, innovation, adaptability, critical thinking and cognitive development. In addition to encouraging creativity in students, AI tools provide personalised assistance and feedback as well as customised study materials. Moreover, they have proven beneficial in cultivating critical thinking and enhancing students' research skills. Instead of questioning teachers' preparedness for AI technologies, the focus should be on discovering optimal ways to effectively integrate these tools into the classroom. This literature review explores the possibilities of implementing AI tools in the classroom to promote students' higher-order thinking, enhancing the overall quality of teaching. It also underscores the indispensable role of school pedagogues in bridging the gap between teachers and AI tools as an educational innovation. School pedagogues are instrumental in supporting teachers during the integration of AI tools into their teaching by showcasing practical applications, emphasising potential benefits for student engagement and learning outcomes. In this capacity, school pedagogues bear the responsibility of fostering a reflective and critical approach towards AI tools, highlighting ethical considerations and advocating responsible technology use in the classroom. The creative integration of AI tools into the classroom, guided by school pedagogues' support, has the potential to create a more personalised, engaging and effective learning environment for students.

Keywords: AI tools, creativity, school pedagogues, teachers, teaching

The Role Of The Teacher In Working With Student Health Care: A Student Perspective

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Abstract

This paper presents findings from a qualitative study conducted in two Swedish high schools. The aim of is to examine the students' perspective of the role of the teacher in working with student health care. Interviews with 34 students aged 16-19 were carried out. Data was analyzed using qualitative content analysis resulting in four dominating roles: 1) Teachers who create joyful learning, 2) Teachers who create a sense of control, 3) Teachers who spread happiness and 4) Teachers who makes the students feel valued. These finding are largely in line with inclusive teaching. A conclusion is that the student perspective of the role of the teacher in student health care has great similarities with the role of the teacher in inclusive teaching. Viewing teachers' work with student health care in close connection with inclusive teaching can offer a new, pedagogical perspective on the role of the teacher in student health care, perhaps a role where teachers feel comfortable as opposed to something new or outside of their profession.

Future students' perspectives on higher education. A social pedagogical analysis

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Abstract

The aim is to contribute to the development of scientific knowledge regarding discursive representations by future university students of conditions for further study at the university level. Qualitative interviews were collected and analysed to answer the research question, How do future university students in rural areas describe the conditions for further studies at the university level? Their descriptions create and reproduce a series of significant representations in two discursive categories: proximity/distance to studies and education offerings. Proximity and distance involved analysed narratives regarding physical distance to studies, commuting by public transport or private car, and moving to the home city of a higher education institution. The category of education offerings involved narratives around the importance of location in education, remote learning, and doubts about pursuing higher education/higher education choices. Representations in both categories were performed as tense and balanced between depicted conflict and consensus. This balancing act represents a means of creating and re-creating cohesion, involvement, integration, participation, unity, and normality in the discourse and can be interpreted as a form of social pedagogical recognition that is important for the actor's success in the context that the narratives reflect.

Analyzing Teachers' Standpoint About ICT Role In Growth Of Social And Citizenship Competences: A Neural Network Approach

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Abstract

The Republic of Croatia has placed greater emphasis on the development of personal, social and citizenship skills by adopting a curriculum-based approach to teaching. Social and citizenship competences include skills such as communication, conflict resolution, understanding of social mechanisms and many others that contribute to improving the quality of life. Information and communication technologies (ICT) enable communication, can help individuals to participate in social activities and provide access to a wide range of information. Responsible use of ICTs is crucial to optimize the benefits for improving social and citizenship competences while being aware of the potential challenges and risks they can bring. Given the importance of effective social interaction and citizenship education in addressing the challenges of living in today's society, this paper focuses on discovering relationships between different variables and teachers' attitudes that ICT use plays a positive role in developing social and citizen competencies that empower students to actively engage in the community. To discover the hidden patterns between teachers' opinions about the role of ICT in this matter and other variables, the neural network approach was chosen. The best neural network model created had an overall classification accuracy of 77.78% and was able to correctly classify all teachers who believe that the use of ICT has a positive effect on the development of social and citizenship competencies.

Keywords: citizenship competence, ICT, neural networks, social competence, teacher

Developing Competencies in Higher Education: Application of Digital Competence in Future Preschool Teachers' Initial Education

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Abstract

Education is undergoing a digital transformation at all levels. Future preschool teachers should be subjected to teaching methods that enhance their digital literacy, which indicates the importance of university teachers increasingly incorporating ICT into the curriculum. Therefore, the aim of this research was to analyse the presence of digital competence in the study programmes of early and preschool education at universities in the Republic of Croatia. A qualitative content analysis of a total of 964 curriculum documents was carried out, following the model of Sillat et al. (2017). The implementation of digital literacy is examined in terms of required competencies, course objectives, course content, learning outcomes, teaching forms, course requirements, assessment and recommended bibliography. The results show that digital competence plays a role in all undergraduate and graduate courses – in the total of 203 courses, digital competence is implemented in 130 courses (83 mandatories and 47 elective) at the undergraduate level and 74 courses at the graduate level (53 mandatories and 21 elective). Digital competence is most pronounced in the learning outcomes ($N = 210$) of the courses. The contribution of this research can be perceived in improving the quality of the teaching process and strengthening the digital competence of initial preschool teachers' university programs to generate new knowledge, skills and attitudes about the use of digital tools as a complement to collaborative learning methods. This research provides a foundation for improving the planning process of university teachers with the aim of strengthening the professional competences of future preschool teachers.

Keywords: curriculum, digital competence, early childhood education, future preschool teachers, higher education.

The influence of technology on improving the learning of literature in high school students

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Abstract

This paper aims to highlight the influence and active role that technology plays in the educational process of young people in high schools. The specific objective is related to innovative methods that can be applied to improve the teaching and learning of literary works or processes within this age group, considering both current teachers and students in the field, as potential teachers.

Therefore, the research questions are directed to three focus groups through a questionnaire. This quantitative methodology analyses the current situation, possibilities, and tendencies of where reading can go and how reading as a process and interpretation as a method of understanding and analysing literature can be assisted.

Data processing factors in finding the tendency that the younger generation is inclined towards technological facilitation, the necessity for teachers to be trained, and the innovative models experimented with by students, serve as evidence for a new approach to literature.

In conclusion, this situational detection supports the hypothetical idea that if we approach technological tools as aids to bring young people closer to modern theories of learning, then each of the actors involved in the process finds themselves playing their role. Thus, the educational process is aided by technology to reshape traditional learning towards new forms of communication.

Keywords: technology, education, influence, approaches, resizing

The use of digital tools among students at teacher studies during teaching preparation and performance

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Abstract

Digital tools include various apps, software and platforms used to facilitate, improve and advance different processes. They provide a wide range of possibilities to improve teaching process, by enabling interaction, personalization and efficient learning. The digital tools are used more often as they present an integral component of a teaching process. The paper analyses the use of digital tools among students at teacher studies during public lessons preparation and performance. The goal of this research is to identify digital tools used by teacher studies' students while preparing and implementing public lessons, and to define the context and phases digital tools are used in, as well as the use frequency. The research was implemented by disseminating a questionnaire among students studying at the fourth and fifth year of teacher studies at the universities of Split, Osijek and Zagreb. The questionnaire was drafted for the needs of this research. The research results enable better insight into the diversity of digital tools used by students in the process of preparing and delivering their public lessons. Apart from the mentioned, the research results contribute to a better understanding of the digital tools use in educational process, and they provide guidelines for the improvement of the education incorporating digital tools.

Keywords: digital tools, public lessons, teacher studies students

The Application of Music Therapy and Therapeutic Storytelling Using Assistive Technology to Improve the Quality of Expressive Communication in Boys with Autism Spectrum Disorder Diagnosis

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Abstract

Autism Spectrum Disorder is a developmental disorder with a neurological basis, characterized by an atypical developmental sequence and qualitative impairments in the domains of reciprocal social interaction, verbal and non-verbal communication, along with the presence of limited, repetitive interests and activities. In part of the population diagnosed with autism spectrum disorder, the development of functional speech is completely absent. In cases of developed speech, there can be difficulties with pragmatic aspects of language and prosodic abnormalities. Effective communication is one of the basic developmental goals for every child as it enables independence and equal participation in all significant life areas. Assistive technology represents various devices, equipment, and computer programs that serve to maintain, increase, or improve the functional abilities of individuals with disabilities. This work showcases the use of the "Talking photo album" device, used for applying therapeutic stories and songs in the context of music therapy, during work with a boy diagnosed with autism spectrum disorder. The implementation of the intervention lasted four months. The first goal of the intervention was to induce vocal and/or verbal reproduction of a short phrase whose intensity matches that of the spoken, original phrase of the interlocutor. The second research goal was to achieve at least three reciprocal interaction turns: teacher-student, during one music therapy session. Descriptive data analysis indicates a slight increase in: 1) the domain of expressive communication - subdomain of vocal communication and 2) the domain of social skills - subdomain of sequence exchange/interaction turns.

Keywords: assistive technology, autism spectrum disorder communication, music therapy, therapeutic story

The Transformative Role of Technology in STEAM Education

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Abstract

In the present educational landscape, the integration of Science, Technology, Engineering, Arts, and Mathematics (STEAM) has emerged as a holistic approach to preparing students for the challenges of the future. Among the components of STEAM, technology plays a pivotal role in enhancing learning experiences, fostering creativity, and equipping students with essential 21st-century skills. This paper explores the multifaceted role of technology in STEAM education, describing its significance in promoting innovation, fostering learning, tackling real problem solutions, and developing students' competences.

The research goal is to investigate and analyze the impact of technology integration on the outcomes of STEAM education, with a focus on its transformative potential in enhancing learning experiences and highlighting interdisciplinary links in this synergy. Specifically, the focus of the research is to put in evidence the correlation of the technology component with the other components from the STEAM acronym and to explain its motivation role in students' involvement in learning.

The research process is based on gathering and synthesizing relevant scholarly sources to gain insights into current theoretical frameworks and practices. This involved qualitative method approaches, analysis of STEAM practices being publicly available in school environments in Moldova, and collecting of data from observations, interviews, and interpretation of the findings. The paper discusses the implications of the findings in the context of the use of technology and its significance in STEAM school education, as well as some challenges of STEAM implementation in practice. The research findings are summarized in conclusions in the light of their implications for theory, practice, and policy.

Keywords: Technology, STEAM Education, Technology-enhanced learning, Interdisciplinarity.

The Fisher Information model to analyse learning management systems

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Abstract

The information and information entropy, as the fundamental concept and quantity in information theory, are used to measure not only the amount of information, but also the degree of order and disorder of a natural or social systems. Entropy is a key factor in the exchange of messages in an information system. In many information theories, entropy is an important concept.

The model treated in this paper consists of the analysis of a learning management system, considering it as an information system and based on the Fisher information model. Specifically, the LMS of University of Shkodra and Metropolitan University of Tirana are considered as a model and included in the questionnaire with the aim of extracting feedback regarding the defining of how stable this information system is, taking as a reference point the theoretical model of Fisher's information.

The methodology used in this model consists of creating a questionnaire, distributing it, receiving a feedback and then analyzing the data through software with the aim of providing adequate results.

The results obtained from the questionnaire data are placed in a comparative analysis with other models that have addressed the sustainability of learning management systems.

Finally, the discussions and limitations addressed in the paper reflect the difference of the research in question in relation to the current research in this field of study, being concretized in the use of other information models for the analysis of the sustainability of information systems in general and of learning management systems in particular.

Keywords: entropy, sustainability, analysis, questionnaire, software

The Use of Digital Resources in the Formative Assessment of Primary education in Romania

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Abstract

The article describes a research in which there were investigated the practices and perspectives of Romanian primary education teachers regarding formative assessment and the use of digital tools in this process. I distributed a questionnaire to teachers, collecting data on their use of formative assessment, familiarity with available digital tools, and their perceptions of technology integration in formative assessment. The final goal of the research is to identify the needs, challenges, and opportunities related to the use of formative assessment and technology in primary education with the goal of improving educational practices and student outcomes.

The results showed that most teachers are aware of the concept of formative assessment and recognize its importance in primary education. However, the use of formative assessment practices in the classroom varies. Interest in integrating digital tools to support this process is also varied, the most frequent motivation being the need to learn how to use ICT tools and educational platforms or limited access to technology. Those who participated in the study stated that they use digital resources sometimes in the formative assessment process, considering that they do not sufficiently support this process. It is, however, to be appreciated that the majority is interested in training activities to improve the skills of using digital resources in the formative assessment process.

The research conclusions highlight the need to improve access to digital resources and the continuous training of teaching staff in improving skills in the use of digital tools in formative assessment.

Keywords: formative assessment, primary education, digital resources.

The use of Virtual Reality in Learning and Teaching Visual Arts in Grammar School

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Abstract

Over the past 10 years, Virtual Reality (VR) has been widely utilized in education across various fields, including visual arts. It allows students to interact, contextualize, and a deeper experience of artworks. The advantages include students visiting virtual galleries and museums worldwide, exploring sites and architecture in three dimensions, and creating their virtual galleries during the learning process. The research aims to examine students' attitudes toward the impact of virtual reality on understanding teaching content in the subject of Visual Arts. The study determined the extent to which students use different forms of VR outside of class, their opinions on the frequency of using various forms of VR during learning, and the impact of VR usage on teachers' instruction. The research involved 84 students from grammar school programs in Vukovar and Osijek. Survey results indicate that only 9.5% of students were unfamiliar with VR outside the classroom. During class, virtual galleries were the most commonly used form of VR content, while other forms were less prevalent. The majority of students believe that the use of VR content makes teachers' instruction more interesting and showcases their creativity. Additionally, most students feel that the use of VR content makes learning more engaging, enhances the perception of artistic works, allows for contextualization, encourages creativity, and improves knowledge acquisition. Ultimately, survey results suggest that VR technologies have the potential to enrich the learning experience, and there is interest in increased utilization of such content.

Keywords: grammar school, virtual galleries, virtual reality, visual art

Professional development of teachers on the eTwinning digital platform

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Abstract

The professional development of teachers in today's world of rapid changes and challenges can be continuously achieved through cooperation and partnerships with institutional, local, national and international stakeholders. Interest in helping colleagues, collegiality, extrinsic and intrinsic motivation for improvement, two-way mentoring, proactiveness, decision-making and operational focus on professional focus can lead to a culture that includes continuous learning for all stakeholders in the educational system. eTwinning is a digital platform that brings together teachers and other educational staff and continuously promotes lifelong learning and professional development because it networks teachers with the help of ICT. It is a community that provides teachers with different resources and learning opportunities and promotes the use of ICT in education by involving teachers in online courses, webinars, workshops, projects and conferences. Cooperation among teachers from different European countries contributes to the internationalisation of education and promotes international collaboration, inclusion and receptiveness. The review aims to provide insight into the relevant scientific literature and an overview of research on the importance of professional development of educational staff through various forms of collaboration through the eTwinning digital platform. Studies have shown that it is necessary to encourage cooperation among teachers because it contributes to creating a positive school culture. In addition, digital platforms are helpful, especially eTwinning, since it promotes not only the use of technology and the development of digital competencies, cooperation, reflection, exchange of experiences, innovations, different forms of communication, but also building of friendships and encouragement of creativity and productivity.

Keywords: digital competencies, educational staff, professional competencies, reflection, cooperation.

Comparative Analysis of Virtual Reality and On-Site Visits: Exploring the Anne Frank House Experience

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Abstract

This study explores the differences between virtual reality (VR) visits and on-site visits to the Anne Frank House, which is an important location in Holocaust education. We aim to assess the emotional, educational, and cognitive dimensions of engagement by conducting a literature review, qualitative interviews with educators, and experiments comparing on-site visits with VR experiences.

We will examine the emotional responses generated by VR and on-site visits, evaluating the ability of VR to replicate the emotional intensity of visiting the historical site. We will evaluate the educational effectiveness of VR in conveying historical information and context, comparing knowledge retention and engagement levels with the traditional on-site educational experience. Our research will also delve into memory recall and spatial understanding to determine whether VR can provide a cognitive experience comparable to physical visits.

By comparing subjective and objective outcomes, this study aims to advance our understanding of VR's potential in preserving and promoting cultural heritage in a digital age. Although VR can offer access to the location for students who, for various reasons, cannot visit the Anne Frank House in Amsterdam in person, there are still emotional and cognitive limitations.

Keywords: virtual reality, cultural heritage, emotional engagement, cognitive impact, Holocaust education

Click for friendship - peer relations on social networks

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Abstract

The Covid-19 pandemic and the post-pandemic period brought changes in social relationships. As a response to the new situation, the virtual world offered a variety of opportunities to maintain and create social relationships.

The aim of this paper is to determine the representation of the friendly peer relationships in the period during and after the pandemic in the leading global and local databases, and to determine the possible directions provided by the researched sources in response to present challenges in the field of education.

The research was conducted by the documentary research method, and it was followed by the analysis of the content of textual primary sources. The scope review followed the guidelines recommended in PRISMA-ScR (Page et al., 2021) and remained limited to scientific articles on peer friendships on social networks published between 2021 and the time of writing (January 2024). The scientific articles, published in English and Croatian, were found in the Web of Science and Scopus databases and on the Portal of Croatian scientific and professional journals Hrčak.

The research results quantified a total of 59 scientific papers. Empirical papers prevail over theoretical ones and the quantitative paradigm prevails in empirical papers. The analysis of the documentation revealed a diverse structure of research participants and only a small number of articles dealt with participants with special educational needs. In the conclusions, the analysed articles mostly focused on the positive and negative aspects of the use of social networks and on the quality of friendships on social networks.

Keywords: peer relations, social network, friend, online friendship

Self-assessment of digital competencies among students at the University of Slavonski Brod

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Abstract

Digital competencies of students are becoming increasingly important in contemporary society, enabling students to successfully meet the demands of the academic, professional, and social communities. These competencies encompass a wide range of skills and knowledge related to the use of Information and Communication Technologies (ICT). Higher education institutions increasingly recognize the importance of integrating digital competencies into the curriculum to prepare students for the challenges of the modern work environment. Continuous improvement and monitoring of technological trends are also crucial for maintaining the relevance of digital competencies throughout one's career. The aim of this research is to establish the connection between the self-assessment of digital competencies among students at the University of Slavonski Brod and different selected factors. The objective is to determine whether students of different genders, majors, levels, durations, and study programs significantly differ in the self-assessment of their digital competencies and programming experience. The methodology is quantitative and involves the analysis of self-assessment questionnaire results. Non-parametric methods were used, and the results indicate that students of the Integrated Undergraduate and Graduate University Teacher Education Program show the highest level of self-assessment of digital competencies. Students of the Undergraduate University Program in Eco-Engineering and Nature Protection demonstrate the most significant programming experience, while female students have more programming experience than their male counterparts. The research results can serve as a stimulus for improving study programs.

Keywords: Contemporary society, Curriculum, Programming, Students, Study programs.

Empowering Education with Robots: Attitudes and Perception of the Integration of Educational Robots in the Curriculum

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Abstract

Educational robots have moderate yet significantly positive effect on learning outcomes. They align with contemporary learning theories, supporting active learning, social constructivism, and constructionism theory. They also have positive impact on student behaviour and development, most notably in problem-solving, collaboration, learning motivation, participation, and classroom engagement.

This research investigates attitudes and perceptions regarding opportunities and challenges brought by integration of educational robots in the teaching and learning process, but also their expectations regarding the future use of robots in education. The study employs an online survey to examine the attitudes, opinions, and perceptions of young and mature adults engaged with the Croatian educational system, from their perspective of either a student or a teacher.

The findings suggest that educational robots contribute to improving students' motivation and interest in the curriculum, as well as their computational and logical thinking, but also reduce their anxiety and insecurity. They also have a major role in supporting children with developmental disabilities in their education. On the other hand, the research found that the use of educational robots, without sufficient involvement of teachers and peers, leads to students' feeling of loneliness and decrease in emotional, social, and communication skills.

It can be concluded that while educational robots present a valuable technological advancement that empowers and transforms education process, they can't replace human teachers and instructors, especially in terms of communication and social relations. Thus, it is necessary to employ strategic and systematic approach to planning and executing their integration in the curriculum.

Keywords: attitudes, educational robots, perception, students, teachers

Exploring the Role of Social Networking and Gaming Time on School Achievements

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Abstract

In the past 15 years, children's online activities have undergone significant changes, with a notable rise in social networking engagement, particularly on platforms like YouTube and Instagram. According to EU Kids Online, over three-quarters of Croatian children aged 9 to 15 use the internet daily. Data comparisons across 19 European countries revealed minimal gender differences in visiting social networking sites, although boys tend to spend slightly more time online than girls. Additionally, boys are twice as likely as girls to engage in daily online gaming. Among the most popular online activities are watching videos, listening to music, communicating with friends and family, visiting social networking sites, and playing online games.

This conference presentation delves into the evolving landscape of children's online experiences, particularly focusing on social networking and gaming habits among Croatian youth, alongside their academic achievements. Drawing from data collected from 196 Croatian children aged 12-13, the study investigates the relationship between gender, daily engagement in social networking and gaming, and the language preference for these activities (Croatian vs. English). While no significant difference was found in social networking habits across languages, notable differences emerged concerning gender and gaming frequency. Moreover, the study reveals both positive and negative correlations between time spent on social networking and gaming and academic performance in Language Arts, Maths, and English as a Foreign Language (EFL). Through nuanced examination, the presentation sheds light on the implications of bilingual social media usage and gender dynamics for educational outcomes.

Keywords: Social networking, gaming, school achievement, L1, EFL

Advancing Sustainability in IT Consulting: Introducing a Circular Economy Maturity Model

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Abstract

The topic of sustainability is becoming an increasingly important challenge in the IT sector for the next years. The Circular Economy (CE), therefore, will play a crucial role in becoming a more sustainable IT company. Translating CE principles into actionable strategies, also, is a major challenge for IT consulting firms, that help IT service companies reach their sustainability goals. As a first step towards the implementation of a CE approach, a tailored Circular Economy Maturity Model for the use within IT consulting companies was developed. Drawing upon the foundational research outlined in prior work, which includes a comprehensive Systematic Literature Review and insights from an elaborated expert workshop, the focus of this research paper has shifted towards a model for the practical application of CE principles within IT service companies. The model identifies five maturity clusters, as well as key action areas, to be measured and improved: 'Ecosystem', 'External Influences', 'Corporate Management', 'IT & Digitalization' and 'Circular Strategy.' Through a systematic grading system, organisations can gauge their current 'CE maturity level' and learn how to improve their level through first recommendations towards proactive sustainability practices. So, the CE maturity level can be improved step-by-step to establish a comprehensive circular strategy.

The described approach, thereby, demonstrates a model for driving sustainable transformation, contributing to a greener and more economically resilient future. The model, the measuring tool and the proposed CE maturity levels can also be transferred to other application fields in the service sector.

Keywords: Circular Economy, IT Consulting, Maturity Model, Sustainability

A Framework of Remote Subconscious Communication on Students' Psychological Well-Being in Educational Environments

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Abstract

Many educators consider learning and teaching to be stronger school factors than implementations of awareness programs to prevent hidden communication tactics that negatively influence the mental health of students. It is difficult to identify hidden forms of communication on a subconscious level as a cause of mental health problems among youth and students in educational contexts. A study is conducted to identify methods and technological means relevant to remote voice and sound communication on the sub-conscious level and their impact on students' psychological well-being in educational environments. The purpose of this research is to create a framework that highlights methods and the procedure of remote subconscious communication to detect early signs of hidden subconscious manipulation that impede students' emotional, social, cognitive, and work-action competencies. In the framework presented we focus on methods and technology means related to technology-driven remote subconscious communication. Finally, we suggest multidisciplinary research that can help address the challenges our framework implies.

Keywords: communication tactics, mental health, methods and technology, students

Examining the relationship between user expectations and the extent of augmented reality adoption in educational settings

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Abstract

It is essential to comprehend the effects of augmented reality (AR) technology through user experiences. Through an analysis of the alignment between users' anticipations and the actual functionalities and constraints of augmented reality, researchers can gain helpful information concerning the factors that impact user satisfaction and adoption rates. Furthermore, a study of how the adoption of augmented reality differs among students of varying ages can yield significant knowledge for educational settings seeking to optimize the utilization of this technology. The main goal of this study is to ascertain user needs regarding augmented reality experiences in educational settings. The research was carried out involving participants from three different educational levels: primary school, secondary school, and higher education. Specific implications were drawn based on the analysis of the user experiences.

Keywords: augmented reality, educational setting, user expectation, experience

Educational potential of major MOOCs platforms

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Abstract

The progress of online learning and the promotion of open educational materials, offering a unique educational opportunity have led to development of innovative virtual courses known as Massive Open Online Courses (MOOCs). Despite of MOOCs widespread and continues increase in usage, there is still lack of its comprehensive evaluation. The aim of this paper is to evaluate selected free courses focused on student training on three different platforms based on existing approaches in MOOCs evaluation and to provide a common recommendation for using MOOCs. The analysis included data collected from online platforms Coursera, EdX and Udacity as well as from Class Central aggregator's database, which offers insights into MOOCs available on major online platforms. Based on content analysis of articles, reports, official documents related to MOOCs and information obtained from user reviews common factors that promote using the platforms include high quality course content, flexibility of platforms, diverse course selection and credible instructors. Results offer a detailed insight into how technology can influence student training and its potential to enhance the overall quality of education for students.

Keywords: course, enhance, evaluation, learning, support

Applying Content and Language Integrated Learning method in English and ICT lessons

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Abstract

As a teaching method, Content and Language Integrated Learning (CLIL), enables not only pupils' motivation for learning enhancement but also helps improve the ability of communication in a foreign language. In addition to that, this method provides the rise of awareness of linguistic diversity during various learning activities of getting familiar both with a certain content and related vocabulary. This article presents a CLIL activity realised in the Primary school Juraj Dobrila in Rovinj during the ICT class, developed as an example of good practice gained during the Erasmus+ project in collaboration with Charles de Foucauld Elementary school in Brest, France. CLIL lesson was designed as a set of activities based on a 'treasure hunt' which consisted of ICT tasks expressed in the English language. Using a given code system, pupils had to decipher these tasks to find clues that would lead them to hidden treasure. Afterwards, the evaluation aiming to determine the potentials of CLIL implementation, revealed pupils' highly positive attitude wishing to repeat it in smaller groups and in a larger area. Therefore, applying CLIL has resulted with pupils' motivation and implementing this method will undoubtedly enhance learning experience and expected outcomes.

Keywords: Content and Language Integrated Learning (CLIL), ICT, innovative methods, primary school

Evolution of Literacy in the 21st Century: Investigating the Influence of Artificial Intelligence on Education - A Comprehensive Literature Review

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Abstract

The 21st century has witnessed a profound transformation in literacy education, largely propelled by advancements in artificial intelligence (AI) technologies. This comprehensive systematic literature review (SLR) explores the multifaceted relationship between AI and literacy education, aiming to elucidate its impact on the evolving landscape of education. Drawing upon a wide array of scholarly works, this review delves into the intersections of AI with literacy acquisition, pedagogy, assessment, and educational equity. By examining the theoretical frameworks, empirical studies, and practical applications, this review elucidates the opportunities and challenges posed by AI in fostering literacy skills across diverse learner populations. Furthermore, it investigates the ethical considerations, socio-cultural implications, and future directions for integrating AI into literacy education. Through this synthesis of existing research, this review provides valuable insights for educators, policymakers, and researchers to navigate the complex terrain of AI-infused literacy education and to foster inclusive, innovative, and effective educational practices in the digital age.

Keywords: Digital Age, Artificial Intelligence (AI), Educational Technology, Educational Research

The Effectiveness of Math Computer Games in Promoting Student Engagement and Achievement

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Abstract

Modern education is increasingly shaped by information technology, aligning with the knowledge-based progress of contemporary society. Learning is most effective when it involves multiple perceptual experiences, enabled by multimedia teaching. Math computer games can help students develop positive attitudes towards math and facilitate the acquisition of abstract thinking, logical conclusions, and precise formulation of phenomena, which are important skills for success in math and other subjects. The purpose of this study was to determine the level of influence of mathematical computer games, which meet the pedagogical criteria in classes, on the learning of students of different chronological ages and on the learning of students with regard to gender, but also in relation to the learning strategy. Students of the 4th grade of elementary school (students of younger school age, average chronological age of 10 years), students of 8th grade of elementary school (students of older school age, average chronological age of 14 years) and 4th grade high school students (average chronological age of 18) participated in the study. The study incorporated a testing methodology involving pretest and posttest assessments. Results show that the use of math computer games has a positive effect on learning outcomes for students of all ages, regardless of whether they are younger or older, or male or female. A blended approach, which combines traditional teaching methods with the use of math computer games, has been shown to be especially effective for students who have difficulty learning through traditional methods alone.

Keywords: game-based learning, mathematics education, blended approach

Relationship between school climate, depression, anxiety, stress and compulsive social media use

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Abstract

Today's youth are also called “digital natives” because they have not experienced life without the Internet. The rise of social networks has revolutionized communication methods and led to increased screen time among the youth. Despite its many benefits, excessive use of social networks can have negative effects on daily routines, school performance and mental health. While evidence suggest that positive school climate is associated with fewer risky behaviors and less mental health problems in real life, there is a growing interest in understanding whether these benefits also apply to behaviors and outcomes within the digital realm. The aim of this study was to examine the relationship between school climate, depression, anxiety and stress and compulsive social media use in high school students. A cohort of 3621 second-year high school students participated in the study, of which 46% were male, 51% were female, and 3% did not want to declare their gender. The following questionnaires were used in the research: Croatian school climate questionnaire, DAS (depression, anxiety, and stress) scale and Compulsive social media use scale. The results showed that school climate is a significant negative predictor of compulsive social media use, and that depression and stress are significant positive predictors of compulsive social media use. Also, a significant mediating role of depression and stress in the relationship between school climate and compulsive social media use was obtained. Thus, a positive school climate is related to fewer symptoms of depression and stress, which is related to less compulsive social media use.

Keywords: school climate, depression, anxiety, stress, compulsive social media use

The contribution of additional digital content in the teaching of science and social studies

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Abstract

The rapid advancement of information and communications technology (ICT) has resulted in its integration into the educational process, leading to changes in teaching methodologies and approaches. In addition to digital textbooks, which are electronic versions of printed textbooks, teachers and learners now have access to a wide range of other digital resources to enhance learning and grasp educational content conceptually. ICT has been used in the conceptual learning of scientific content by supplying various tools for creating materials that include not only text and images but also other multimedia elements like sound, video, animation, simulation, 3D renderings, and more.

This study aims to investigate the most common types of digital content among complementary digital resources associated with Science and Social Studies textbooks from three publishers, Školska knjiga, Profil Klett, and Alfa for the 1st and 4th grades of primary school. The research purpose is to determine whether complementary digital content contributes to a better comprehension of the subject matter in Science and Social Studies, specifically in terms of conceptual learning. A qualitative approach was employed to analyse the textbook content and corresponding digital content. The examination of complementary digital content revealed that visual content, particularly photographs and illustrations, is predominant. Moreover, digital textbooks hold a substantial amount of video content. Textbooks from all three publishers show a prominent level of interactivity, with Profil Klett leading in this area.

ICT contributes to constructive learning of scientific content, while the findings indicate the importance of digital literacy for teachers. Teaching supplemented with complementary digital content is more engaging and challenging for students.

Keywords: complementary digital content, Science and Social Studies, conceptual learning, interactive multimedia content

Digital Humanities in Teaching Literature: Albanian Challenge

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Abstract

Faced with the trend of information technology, and the crisis of human studies, the decline of interest in them, the lack of financial support, Albanian culture and Albanian education appear more challenged, therefore it is encouraged to reconcile or change the ways it is studied, and it is taught.

The University study programs that offer solidly and rigorously only Albanian literature, or Albanian linguistics although, the new specialists in this field are urgently needed, are at the same time no longer sufficient to prepare researchers or teachers or to give answers to questions in extensively Albanian studies.

The offering of programs in fields such as humanities which connect information technology and AI, Digital Intelligence, i.e. Digital Humanities, should be embraced without delay in the study programs offered by Albanian universities.

This article, after examining the situation of the humanities studies in Albanian Universities and through an in-depth analysis of challenges and advantages, comparing the experiences of other universities in Europe, proposes and argues the need for the formation of Digital Humanities study programs, initially at the master's level in Albanian university studies, to respond as best as possible to the market, but also to enable humanities' studies to survive and prosper.

Keywords: Digital Humanities, AI, Albanian, education, literature

Media Impact on Children: A Parental Perspective

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Abstract

The research conducted on a sample of 393 parents, who provided data on 401 children, aimed to investigate the relationship between children's aggressive behavior, media use and parental mediation of media. The research was conducted between November 2023 and March 2024 with participants aged 24 to 50. The questionnaire consisted of 5 major parts: socio-demographic measures; children's aggressive behavior; media use by children; parental mediation of media; parental attitudes toward media.

The results highlighted a significant correlation between children's aggressive behavior, parental attitudes toward media, and all three types of parental mediation. Negative correlation was found between restrictive mediation and the use of certain media, such as YouTube, mobile phones and video games, highlighting the importance of parental control in limiting access to potentially undesirable media content. Findings highlight the need for a thoughtful approach to parental mediation, emphasizing the delicate balance between protecting children from potentially harmful content and supporting their emotional and social development.

Keywords: media, children, aggression, mediation

A Holistic Exploration of Artificial Intelligence in Everyday Life

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Abstract

This research proposal seeks to conduct an in-depth examination of the influence of Artificial Intelligence in contemporary daily living. With a focus on various facets such as communication, entertainment, household management, and personal assistance, the study aims to elucidate the ways in which AI has seamlessly woven into the fabric of our everyday experiences. The research will commence by investigating the prevalent applications of AI in communication technologies, ranging from smart assistants to language translation tools. It will analyze the impact of AI on the efficiency and effectiveness of communication, exploring how these technologies shape interpersonal relationships and contribute to the globalization of information exchange. The study will explore into user experiences and preferences, assessing the extent to which AI algorithms influence individual choices and shape the entertainment landscape. Furthermore, the study will investigate personal assistance applications of AI, including virtual personal assistants, productivity tools, and health monitoring devices. It will assess the impact of AI on personal well-being, time management, and the potential for over-reliance on technology for daily decision-making. In crafting a comprehensive perspective, ethical considerations will permeate each aspect of the research. The study will delve into issues of privacy, security, algorithmic bias, and the ethical implications of AI-driven decision-making in everyday contexts. Methodologically, a combination of surveys, user interviews, and analysis of AI system data will be employed to collect both quantitative and qualitative data. The research seeks to provide a nuanced understanding of the adoption, acceptance, and ethical dimensions surrounding the integration of AI into the fabric of everyday life. By shedding light on both the positive and potential pitfalls, this study aims to inform future developments and

policy considerations for the responsible and ethical integration of AI into the everyday lives of individuals worldwide.

Keywords: artificial intelligence, AI in daily life, algorithmic bias, research methodology

Information and Communication Technology (ICT) in Everyday Life: An Integrated Exploration across Various Domains

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Abstract

This research proposal aims to investigate the pervasive role of Information and Communication Technology in shaping and transforming everyday life experiences. With a focus on diverse domains including communication, education, work, and leisure, the study endeavors to provide a comprehensive understanding of the multifaceted impact of ICT on contemporary society. The research will commence with an exploration of ICT's influence on communication, examining the evolution of communication technologies, social media, and their impact on interpersonal relationships. The study will investigate the role of ICT in facilitating global connectivity, the emergence of new communication norms, and potential implications on social dynamics. Ethical considerations will be interwoven throughout the research, addressing issues such as digital privacy, security, information accuracy, and the potential consequences of technology addiction. The study will strive to offer insights into the ethical frameworks that should govern the integration of ICT into diverse aspects of everyday life. The research methodology involves a combination of surveys, interviews, and content analysis to collect quantitative and qualitative data from educators, parents, and children across diverse backgrounds and professions. The research aims to provide a nuanced understanding of the adoption, challenges, and ethical dimensions surrounding the pervasive presence of ICT in everyday life. We also examine the literature on the effects of parents' skills on their children's academic performance, digital literacy, and future opportunities. We propose a conceptual model that integrates the understanding and consequences of ICT skills, suggesting directions for future research and interventions.

Keywords: ICT impact, ICT reshape life, research methodology, ethical consideration, interpersonal relationships

Social media generators in literature teaching

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Abstract

The contemporary teaching process requires active student participation, creative thinking and creation, as well as connecting and drawing conclusions. In this process, student motivation is also important. The research will explore how to stimulate student motivation and creativity in literature classes, considering the fact that it is increasingly difficult to engage students in motivated and active reading of literary works. In contemporary teaching, traditional methods on literature teaching are being abandoned in favor of modern approaches to literature, in which learning outcomes are achieved through problem-solving, creative, and collaborative tasks, requiring students to develop various expressive, artistic, creative, as well as digital and other abilities.

This paper will demonstrate how social media generators (e.g., Zeob, Fakebook, etc.) can be used in literature teaching. Students today are daily users of media and social networks, and the use of social media generators by students requires reflection on the functioning of these social networks and creative creation using various digital sources. Paper will demonstrate how students can develop creative writing by using social media generators in literature classes, which includes narrative storytelling with a change in perspective and understanding relationships among characters, as well as language expression skills, which involve adapting expression to the chosen social media platform.

Keywords: literature teaching, encouraging reading, social media generator, creative writing

Relationships of Internet use, victimization and violations of regulations with Cyber Gender-based Violence and Gender-based Violence

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Abstract

Gender-based violence (GBV) especially affects women and gender minorities, and due to the development of digital technologies, cyber gender-based violence (CGBV) appeared. Different ecological models of GBV recognize the importance of victimization and violations at the individual level. Therefore, this research examined the relationship between Internet use, victimization, and the commission of offenses with CGBV and GBV. 249 students from two universities (the University of Osijek and The South-West University "Neofit Rilski") participated in the study, of which 129 were from Osijek and 211 being women (84.4%), with an average age of 22.95 years ($SD=3.72$). Students evaluated their use of the Internet and assessed the level of victimization, and involvement in violating regulations. They completed the CGBV (18 items per subscale) and GBV scales (16 items per subscale), each with two subscales related to committing and experiencing violence. Four multivariate regressions were conducted in which the criteria were experiencing/ committing CGBV, and experiencing/committing GBV respectively. The model explains 12.9% of the variance of experiencing CGBV, 12.1% of committing CGBV, along with 9.1% of experiencing GBV, and 4.4% of committing GBV. While internet use was an insignificant predictor for all four criteria, victimization and violation of regulations are significant predictors of committing and experiencing CGBV, victimization is predictive of experiencing GBV, and violation of regulations is a predictor of committing GBV. All significant beta coefficients are positive, that is, participants who have experienced a higher level of victimization and who violate more regulations are more involved in CGBV and GBV.

Keywords: cyber gender-based violence, gender-based violence, victimization, violation of regulation, university students

Challenges of virtual learning and teaching adults

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Abstract

The idea of lifelong education is continuously emphasized and present in various aspects of learning and teaching through continuing education, retraining or professional development. Education of adult learners is of great importance because it leads to the personal development of the individual and their balanced participation in social, economic and cultural development of society. The concept of lifelong education is an idea promoted by all significant European and international organizations. Although it is an integral part of the regulation and is an indispensable part of working people, recently there is an increasing number of people of the third age who are actively involved in the process of lifelong education, most of whom are not working. Lifelong education is understood nowadays as a lifestyle, but also as a growing need of every individual, regardless of age, (un)employment, work experience.

The possibility of virtual participation in various forms of acquiring additional knowledge, skills and competences has bridged the gap between the place of residence of the participants and the place of competence acquisition. The virtual environment saved the participants additional time that they would otherwise have to take when arriving and leaving the training place, but also provided an easier organization of current working hours.

The learner's possibilities of taking part in education are numerous in the modern era, from contact to online educational programs, training, or retraining to learning entertainment content that will satisfy the personal interests and needs of the individual. Online educational programs have contributed to overcoming the limitations imposed by the distance of the participants' residence from the place of teaching, as well as by the time limit. Although there are numerous advantages of virtual learning and teaching, it also presents a significant challenge for middle-aged and elderly people who did not grow up with modern technology that accompanies this type of education. This paper investigates the advantages and disadvantages of virtual learning and teaching using two research methods: the Focus group method and the Causal-layered analysis method.

Keywords: lifelong education, Focus group; Causal-layered analysis, virtual learning and teaching

Women as a target group - marketing in the new digital media

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Abstract

Women are the target group for marketing purposes in the emphasis of this work. The purpose of marketing is to persuade the customer to make a purchase, and in order to do this, the customer must first identify their needs and wants before the product can be defined and placed. Digital marketing is inevitably brought up while discussing marketing in the modern day, particularly when it comes to target marketing. Digital marketing is a non-traditional marketing approach that involves advertising using digital platforms including social media, websites, search engines, and so on. However, identifying your target audience is the most crucial step in creating a high-quality marketing strategy. Even with superior quality, a product cannot succeed unless it is marketed to the appropriate audience.

Pricing, product distribution, and promotion are all made simpler and more profitable by targeted marketing. Men and women alike are said to favor advertisements that cater to their individual needs or societal positions in marketing literature.

Finding out how women feel about ads and marketing campaigns targeted at them is the focus of the study. The paper's objective is to shed light on respondents' perceptions of products that are suggested to them and marketing efforts that target them.

Keywords: digital marketing, marketing, target group, target marketing, women

Digital Competences of Early Childhood Educators: A Comparative Study of Early Childhood Teachers' Digital Practices During and After COVID-19

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Abstract

Digital media has become an integral part of everyday life, and its presence in early childhood education is becoming more important. Early childhood teachers need to have strong digital competences to effectively incorporate digital media into their everyday preschool practice. Integrating digital tools into early learning environments can involve creating opportunities for collaborative and social learning experiences, which proved to be very useful during Covid-19 pandemic. By promoting positive interactions with digital media in a social context, teachers can help children learn how to use digital tools responsibly and respectfully. In addition, professional development on digital competences can explore how to effectively engage parents and provide them with useful insight into their child's development.

This study explores early childhood teachers' (N=256) opinions on their digital competences, integration of digital media in their practice, and cooperation with parents during and after COVID-19 lockdowns. Data was collected using online questionnaire in 2020 (N=178) and 2024 (N=78).

The instrument, consisting of 26 items, yielded four distinct scales measuring different aspects of teachers' digital competence (knowledge and skills: $\alpha=0.757$, use of Information and Communication Technologies (ICT): $\alpha=0.883$, teachers' experience: $\alpha=0.836$, and perceived advantages of ICT: $\alpha=0.910$). An independent-samples t-test found that compared to teachers surveyed in 2020 (N=178), those surveyed in 2024 reported lower frequency of ICT use ($t=5.677$, $p=0.00$), a less positive attitude toward ICT ($t=4.081$, $p=0.00$), and a diminished perception of its advantages during the pandemic ($t=6.372$, $p=0.00$).

Keywords: Covid-19 pandemic, digital competences, digital media, early childhood, early childhood teachers

Digital Literary Journey: Literature Available Online

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Abstract

The concept of "school reading," an integral component of Croatian language instruction, refers to a list of works that students are required to read during the school year, as prescribed by the Curriculum of the Croatian Language subject for primary and secondary schools. The purpose of school reading is primarily to cultivate a reading culture among students, enrich their vocabulary, and familiarize them with written language as a whole.

This paper will explore a modern approach to literature through digital literary journeys, with a focus on reading materials available online. By analyzing the impact of technology on how we access literary works, we will investigate the advantages and challenges of the digital era in the context of education and reading. We will discuss various online platforms that provide access to reading materials, exploring how these platforms shape the reading experience and facilitate learning. Additionally, we will address the issue of interactivity, discussing the possibilities of engaging readers through online tools. Through this analysis, the paper emphasizes the importance of adapting educational approaches to contemporary technological trends to foster a love for literature in the digital age.

A critical approach will be taken towards websites containing information on literature or pre-made reading materials. Considering the conducted research, special attention will be given to three websites that students have mentioned as the most commonly visited and utilized: e-Lektire, Lektire.hr, and Lektirko. These three websites stand out as they offer various original interpretations of literary titles and are primarily intended for that purpose.

Keywords: literature, online literature, websites, literary works

Digital and assistive technology in an inclusive classroom - a teacher's perspective

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Abstract

Nowadays, digital technology is developing rapidly and has a strong and diverse impact on humanity. It is also being used in the education system, improving, and changing it and also having an impact on students. The digital technology that has developed and facilitates communication, coping and promoting the independence of children and people with disabilities is called assistive technology. Assistive technology is used to maintain or improve the functional abilities and greater independence of children and people with disabilities and to promote their well-being.

Digital and assistive technologies have become part of the daily lives of students and teachers, and their use in the classroom is mandatory and prescribed in the national curriculum for primary school (MZOS, 2017).

The aim of this paper is to gain insight into the opportunities and barriers to the use of digital and assistive technologies in the work of teachers in an inclusive primary school. The data was collected using the focus group method and is analysed using thematic analysis as a form of qualitative data analysis. The sample was intentionally non-probabilistic and included twelve primary school teachers (divided in 2 groups) in the city of Osijek.

The data collected provides initial insights into teachers' perspectives and experiences of using digital and assistive technologies when working with students in an inclusive classroom. The benefits are highlighted, but the challenges of use are also recognised, along with recommendations for improving the implementation of digital and assistive technologies in the inclusive education system.

Keywords: digital and assistive technology, teacher's perspective, classroom teaching, inclusive environment

Pupils and ICT: Education for Safer Internet

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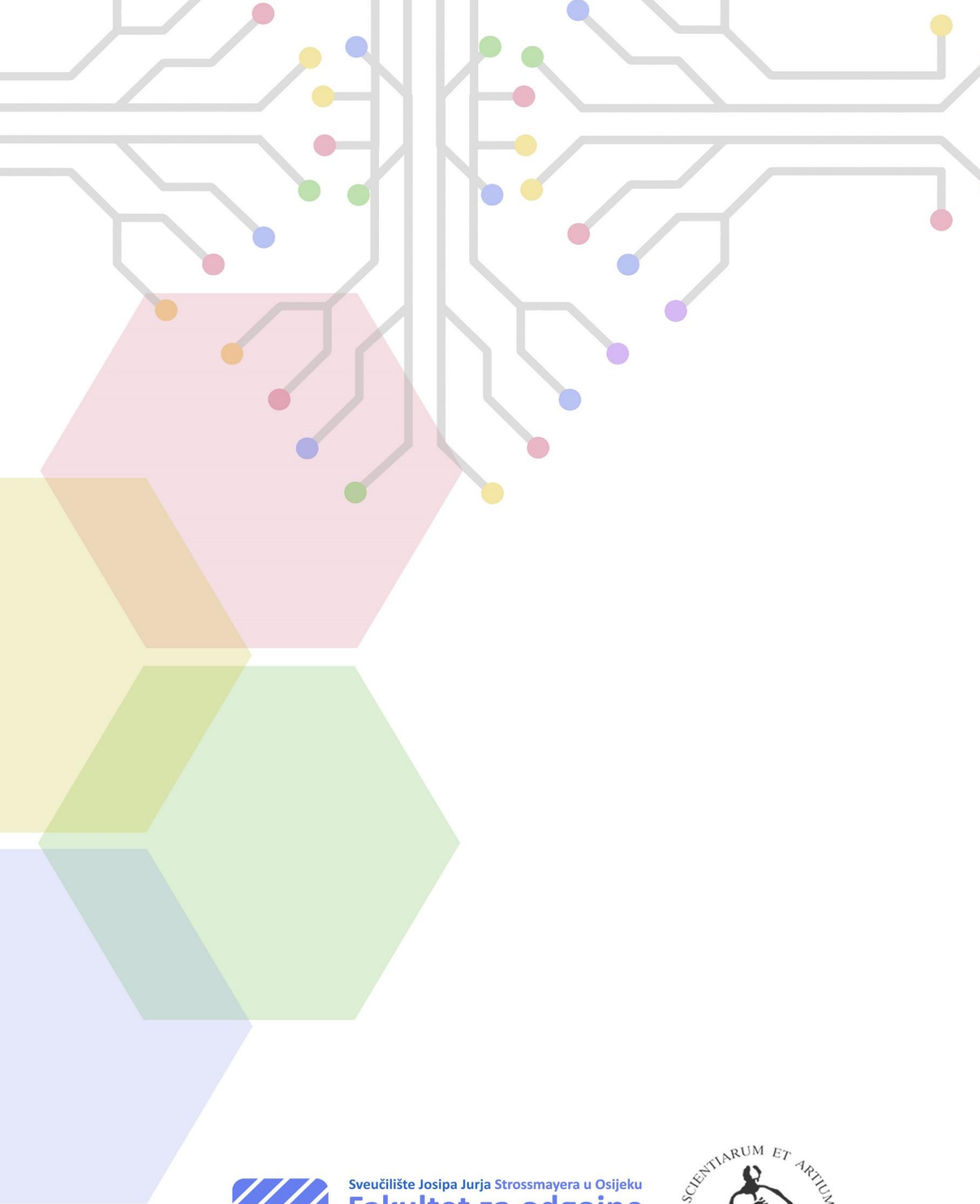
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Abstract

The use of ICT has become an integral part of pupils' everyday lives. The Internet offers countless opportunities for learning, entertainment, and social interaction, nevertheless accompanied by personal responsibility and the need for a secure Internet. It is an alarming fact that over the period of five years there has been an 82% increase in inappropriate online communication with children. This calls for an appropriate answer from educators at all levels of the education system. Teachers should make pupils aware of the importance of responsible and appropriate use of the Internet, while working on the prevention of electronic violence, and attempting to encourage and strengthen responsible digital behavior together with improving pupils' digital competences.

The aim of this paper is to investigate today's response to this challenge in education in order to create a safer Internet in the future. A specific aim refers to determining the activities that schools carry out in order to educate pupils about safer use of digital technologies. For this purpose, a content analysis of school curricula was carried out at the primary and secondary school level. The collected qualitative data have yielded results which show that schools are aware of the dangers pupils are potentially exposed to on the Internet and that teachers systematically provide activities aimed at raising pupils' awareness. The room for improvement is found regarding the activities that could equip students with tools for responsible use of ICT in everyday life.



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