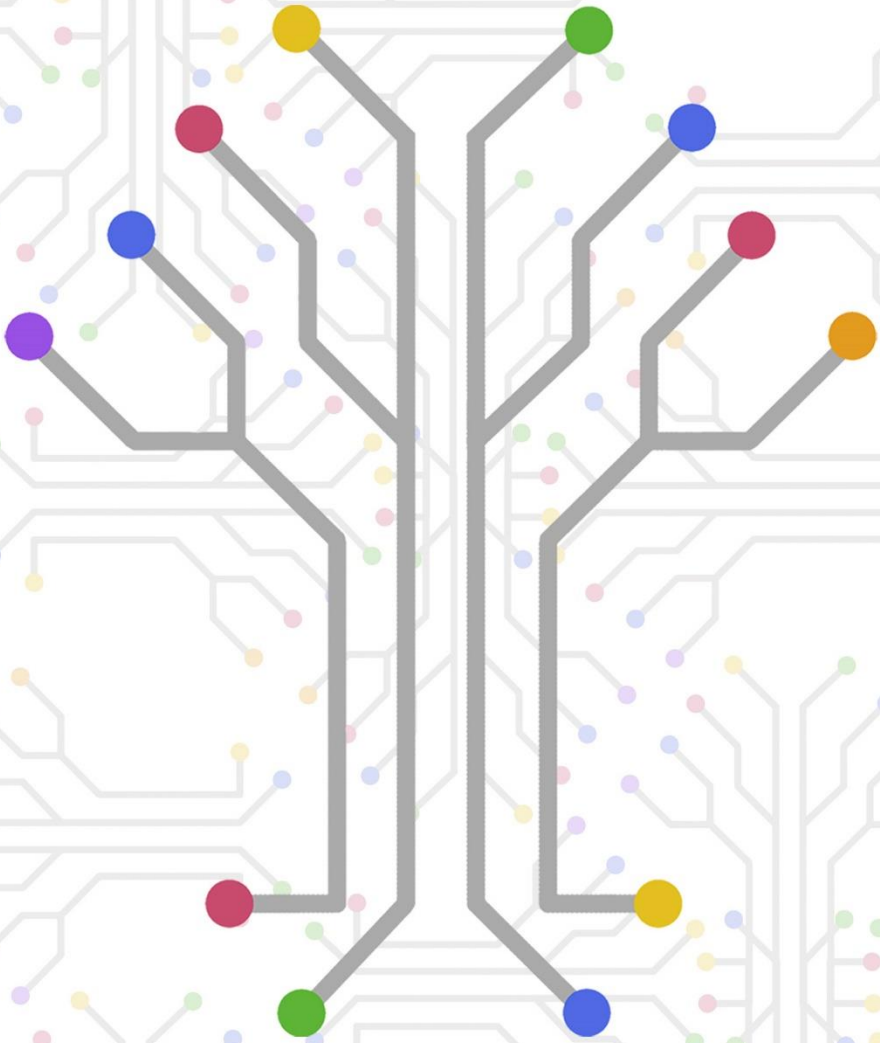

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Inclusive Digital Education

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Abstract

With the development of digital solutions, a variety of hardware, software, digital learning materials, and digital learning content is now available on the market. All of these technological solutions can serve as support materials for an inclusive learning environment but at the same time can involve hidden risks that can create even greater gaps in inclusive education. It is important to develop an understanding of opportunities for using digital technologies to support inclusive education, understanding how to close the digital gap that exists and how to ensure that digital technologies are not supporting new risks of exclusion from the digital learning environment, thereby causing a digital divide.

The term 'digital divide' was introduced by the National Telecommunications and Information Administration (NTIA) in the mid-1990s in the USA, where a divide was identified between those groups of society who have access to information and communication technologies (ICT) and those who do not. The term was initially used to characterize the situation regarding access to ICT, but nowadays we also have to discuss this digital divide from the perspective of inclusive education where access can be provided but digital technology does not support special needs, gender differences, cultural diversity, etc., causing barriers to the use of particular technologies or digital learning materials. Therefore, digital inclusion is an increasingly important social issue, reflecting imperatives, opportunities, and considerations about human rights, equity, issues of identity, language, social participation, community and civic engagement, and opportunities pertaining to the digital world. While the rate of use of different digital solutions keeps increasing, the digital divide persists and the ability to access and use ICT effectively remains inequitable and can cause exclusion from education systems or from particular fields of education. This exclusion can be caused for different reasons: special needs, socio-economic status, cultural diversity, gender, etc. Although digital solutions can be used as support materials to reduce the digital divide, there may also be hidden factors of exclusion in all of these aspects of inclusive education that should be revealed to minimize their effect.

Digital technologies can also be used to tackle problems of early school leaving, which is often related to social exclusion risks which, in turn, can be connected with the socio-economic situation of the student's family, the student's special needs, as well as problems in the educational process. Social exclusion is understood as a multi-dimensional social process of marginalization that possesses economic, social, cultural, and political aspects, and it is characterized by the inability of individuals or groups to join society fully or partially. In education, it is connected with insufficient possibilities to participate in the educational process, exclusion, unsatisfactory social integration, and the inability to participate in the processes going on in society in general.

It is therefore important to understand this phenomenon of digital inclusion as well as to develop strategies and tactics to promote and enhance digital inclusion so that disadvantaged individuals, groups, and communities can have better access to and the necessary skills to use ICT, digital tools, and digital learning materials. We also have to support access to digital media as well as technical skills, educational opportunities, living conditions, personal support, and financial resources, which all play an important role in digital participation.

Keywords: Digital learning, Inclusive education, risks of digital learning, education

Higher Education, Artificial Intelligence and Ethics

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Abstract

The impact of Artificial Intelligence (AI) is spreading across all professions and spheres of human activity, and Higher Education (HE) is not untouched by this spread. Current AI concerns in HE focus on developing AI's functionality, and how best to harness its power to assist HE initiatives. An ignored area, however, is that which covers the ethical issues that are raised by the use of AI in HE. These focus on issues of anonymity, privacy, consent, data ownership, security, AI bias, and several others. This presentation discusses these and other ethical issues in relation to AI in HE, describes some of the complexities of these, and points to some steps that should be taken in order harness AI in HE ethically. The aim is for HE decision-makers and users at all levels to be alert to these issues and to take proactive action in order to be prepared to deal with the ethical issues and opportunities that AI will present to HE.

Keywords: Higher Education, Artificial Intelligence, Ethics

An innovative approach to development of early childhood digital competencies

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Abstract

Political initiative of the European Union encompasses an action plan for digital education used to meet the requirements, formulate strategies and create potentials for development of digital competencies. Since The National Curriculum for Early Childhood Care and Preschool Education clearly defines digital competencies as a crucial part of early childhood care, the primary objective is to stimulate the development of a digital ecological system. The conducted case study determines methods and objectives in the development of early childhood digital competencies. The case study conducted in the time period between 2019-2020 in a mixed-age group in a kindergarten in Brod-Posavina county suggests positive changes in the usage of technology for the development of early childhood digital competencies. Observation and analysis of pedagogical documentation (children and teacher conversation transcripts, children conversation transcripts, photo and video material) resulted in guidelines for integrated development of digital competencies as well as other competencies outlined in the National Curriculum for Early Childhood Care and Preschool Education. Usage of educational content and strategies of constructive learning in social environment provides the context for the development of digital competencies primary goals of which are knowledge and efficient modalities in developing aforementioned competencies. The results of the research provide a basis for understanding and implementing an innovative method of developing early childhood digital competencies.

Keywords: action plan, case study, competencies, ecological system, guidelines

History in the jaws of the internet

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Abstract

In nearly six thousand years of literacy, humanity has made the greatest leap in the dissemination of knowledge within the last century. Computer technology and digitally networked society have accelerated scientific collaboration and production. Historiography has been given a new opportunity for a better collection, analysis and interpretation of man's past. By digitizing archives, museums and other heritage institutions, historical sources become available to a wider circle of researchers who come to new conclusions and perspectives about historical events, processes, and the people who participated in them. Historiography has opened up to the interested public, which has become a significant co-creator of historical narratives. The opportunity for new scientific achievements faces an increase in the accidental and intentional production of false historical sources and an upgrade of historical myths. Based on contemporary scientific literature, the paper analyzes the positive and negative aspects of digitalization of historiography in the postdigital 21st century and also defines new challenges that arise for modern historians.

Keywords: digital historiography, historical sources, internet, postdigital society

Adolescences' online motivation and social influences on their online behavior

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Abstract

The aim of this research was to examine adolescences' online motivation and social influences on their online behavior. 146 female and 45 male (N= 191) secondary school students participated in this research. Results showed that adolescents engage in online activities ((1) online gaming, (2) watching clips on YouTube, (3) browsing the Internet and (4) social networking) primarily because they are bored and have too much free time and less for the academic and informational purposes. Most often adolescents are online alone, but 67% of adolescents share at least one online activity with a peer. 86% of them do not share any online activity with a parent. Parents help promoting online safety more than peers do, but peers are more likely to help adolescents when they encounter a problem or something that bothers them online. Parents and peers influence girls more than boys when it comes to online safety.

Keywords: secondary school students, online motivation, social mediation

Developing Future Ship Engineers' Communicative Competence Using Virtual Classrooms

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Abstract

The utilizing of virtual rooms is one of the options for conducting distance learning foreign languages during a pandemic. The formation of communicative competence of future ship engineers is impossible without the fact that they should speak English during the lesson (it means for about 80% of the time from the whole lesson). In organizing of such distance classes, the BigBlueButton service allows us not only to conduct a video conference, but also: enrich the learning experience with screen-sharing (show a screen or video from an external source, upload a document of any format (including presentation) and virtual whiteboard features: keep general notes, write / draw / sketch on a whiteboard, record videoconf. Also virtual classroom allows for instant feedback, direct teacher-student interaction, and engaging activities to increase motivation and active participation. And one more plus the period of time is unlimited. Students can connect to virtual classroom platforms from any device that can connect to the Internet and they should have an official registered account in the Moodle. Conference is automatically displayed in the schedule. The research also describes other advantages of using BigBlueButton, which is integrated into the LMS Moodle of the establishment. We came to the conclusion that the use of this has a positive effect on the formation of the computer competence of future ship engineers. In our next researches, it is planned to analyze the influence of self-study platforms on the formation of the competence of future seafarers.

Keywords: ship engineers, communicative competence, Moodle, BigBlueButton, virtual classroom

Hybrid learning as a new challenge of teacher professionalization

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Abstract

The COVID-19 pandemic has significantly accelerated the application of blended learning methods worldwide. The educational process is becoming increasingly predestined to take place in hybrid learning spaces, where they really and virtually merge. Teachers were also forced to use information and communication technologies in teaching in order to be able to successfully deal with everyday challenges imposed by the emergency situation and respond to the needs of their students as well as their own professional needs. In such circumstances, hybrid learning becomes an indispensable part of their professionalization, which is already facing certain problems. The paper discusses the factors of hybrid learning in the context of the development of professional identity of teachers as well as various aspects of the educational process that are affected by hybrid learning. The features of a hybrid learning environment in which learning needs to be carefully planned are highlighted because it also allows more flexibility for students without compromising their learning experiences. In this way, the paper analyzes the new dimensions of teacher professionalization through the relationships between teaching practice and their own examples of hybrid learning. Based on this knowledge, the paper provides recommendations for planning new hybrid spaces for thinking and learning.

Keywords: hybrid learning, hybrid learning environment, professionalization, student, teacher

Modular drone in the teaching of Informatics in primary school

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Abstract

The increased attention received in recent times by unmanned aerial vehicles (UAVs) or shorter drones is not accidental. Advances that have enabled the more widespread application of advanced technological solutions in more economically acceptable achievements have also enabled the use of drones in thus far inaccessible or difficult to access tasks. This paper discusses the application of a special subfield of drones: multi-purpose reconfigurable (modular), which provide unique opportunities that can be used in creative teaching, all through the example of the use of modular drones in informatics teaching in elementary school. Modularity provides a flexible platform on which basic forms can be demonstrated to students and that they can freely explore possibilities and discover what drones can do and what are their limitations. There are still some problems and limitations with such devices, primarily the short duration of propulsion batteries between charges and related weak propulsion electric motors for propellers, but nevertheless, this type of drone has proven to be a suitable auxiliary tool in informatics teaching and has proven its applicability for multiple types of tasks explored.

Keywords: multipurpose reconfigurable UAV, drones, teaching informatics

User Centered Design of a Curriculum for Teaching Creativity Online

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Abstract

Creativity was identified as one of the four cornerstone skills of future engineers and is said to rely on direct connection to others, and on teaching settings allowing for face-to-face phronetic experience. Against the background of the pandemic-caused online teaching, the main objective of the European project TICON – Teaching creativity online - is to identify barriers in engineering Higher Education for teaching creativity online, and to upskill the teachers in terms of digital teaching with appropriate pedagogical approaches.

The underlying curriculum, was developed following a User-Centred Design approach. In the first step, Experience Interviews with 32 Higher Education engineering teachers in Turkey, Irleand, Denmark and Germany have been conducted. As a result, barriers and best-practises as well as further needs and interests have been identified.

On this basis, a first draft of the curriculum – the curriculum prototype - was designed and presented to the target group in Focus Groups in each of the four countries. Within each Focus Group, participants were introduced to the project and findings of the interviews. A group discussion was then held by going through the draft curriculum for three aims: To understand, if the curriculum prototype fits into the problem space derived by the Experience Interviews; to derive further needs and ideas for the curriculum and to validate the prototype. The final curriculum consists of three lessons: 1) Why - Introduction to creativity teaching and its relevance for engineering; 2) What - Method and tool skills for online teaching and 3) How - Skill development for how to teach.

Keywords: Online Teaching, Creativity, User-Centred Design, Experience Interviews, Focus Groups

Coordination and Cooperation Practices of Creative Teams in Virtual Field-Level Events for Urban Revitalization

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Abstract

Organized field-level-events, such as temporary New Work formats (e.g. hackathons, urban labs) can be important mechanisms that play a central role in the transformation of a field as they may configure it. Here, cooperation work of an interdisciplinary and creative teams is crucial and requires adjusted coordination practices. Through research conducted as part of the dissertation initial results show important creative team coordination forms of mutual monitoring, back-up behavior, communication, leadership as well as of cooperation work during an organized virtual field-level for urban revitalization. Based on a qualitative case study, field investigations rely on multiple data sources such as video-observations, group discussions and expert interviews. They were conducted within the EU-Interreg-Project "CINEMA" which focuses on urban revitalization.

Within the framework of the investigations the organized field-level event represents a virtual hackathon, where creative teams worked on a solution to a pre-defined problem using digital collaborative tools (e.g. Zoom, Miro). The occurrence of the pandemic represents the unexpected field-level event throughout the length of the project. Generated results of the doctoral thesis are aimed to be scientifically and practically exploited in various areas due to the transdisciplinary nature of the project.

Keywords: coordination, cooperation work, creative teams, virtual field-level event, urban revitalization

Relationships of depression, anxiety, and stress with committing and experiencing cyber-violence

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Abstract

Previous research shows how depression, anxiety, and stress correlate with committing and experiencing cyber-violence. However, the nature of the relationship between these variables is not conclusive due to a lack of longitudinal research. In this research, we have collected data on the committing and experiencing cyber-violence, depression, anxiety, and stress (DAS) from 293 adolescents in two waves. The research objective was to compare the contributions of DAS predictors measured in the first wave to cyber-violence in the first and second waves (and vice versa) while controlling gender and age. The results of hierarchical regression analyses show that DAS explained 14.5% of the variance of experiencing cyber-bullying in the first wave and 12% of the variance in the second wave. DAS and gender predictors explained a smaller portion of the variance of committing cyber-bullying (6% in the first wave and 7% in the second wave). Cyber-violence explained 12.8% of depression variance in the first wave and 9.3% in the second wave. Concerning anxiety, cyber-violence contributed to 9.8% of the variance in the first wave and 9.2% in the second wave. Finally, cyber-violence explained 8.3% of stress variance in the first wave and 6.2% in the second wave. Depression, anxiety, and stress explained more variance of experiencing cyber-violence than committing it. The percentage of explained variance for committing cyber-violence in the second wave increased slightly compared to the first wave. Additional analyses showed that girls' anxiety slightly increases their cyber-violent behavior two months later indicating the need to address it through school prevention programs.

Keywords: cyber-violence, depression, anxiety, stress, adolescents

New collaboration opportunities with the use of digital tools

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Abstract

With ongoing disruption through modern work concepts supported by platform infrastructures, new forms of collaborations are established, especially with the use of digital tools. Not only coworking spaces but also enterprises establish and integrate highly flexible multipurpose working environments, so people can not only work where they want, but also across corporate boundaries.

However existing collaboration tools are relatively new to the market, thus scientifically unexplored. This study explored whether digital tools could establish new collaboration opportunities, support existing workflows and exploring measures to increase cooperation. For this purpose, the method of experience interviews was realized with six members of different coworking spaces. The results indicate the active use of digital tools to increase the efficiency of collaboration such as Microsoft Teams, Google's G-Suite, Slack or LinkedIn. In addition to telephony and email, instant messengers, channels and comment functions for shared data are important means of communication. As there is a high information load, users tend to need digital tools to organize their workflow in order the collaborate properly.

Nevertheless, face-to-face communication is still an essential part of collaboration. Especially when it comes to information and knowledge exchange, the participants of this study rely on spontaneous encounters with their cooperation partners whenever possible. The paper concludes with recommendations for the use of digital tools and gives an outlook on performant possibilities, for example to create synergy effects between personal and virtual cooperation.

Keywords: collaboration, communication, coworking, community, digital, tools

The role of ICT and legal aid in improving the understanding of the Croatian law and legal system – a view from the clinical perspective

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Abstract

In this paper the author attempts to analyse the current level of development and usage of ICT techonology in Croatian legal environment and system. A comparison with The separate research is made regarding the systems developed for courts and legal professionals and those which could be used by ordinary citizens and small businesses. The normative framework is also examined as to the concurrence of the imposition of new legal solutions and the start of their application in practice. Finally, the ICT solutions developed by the Law Clinic OSIJEK PRO BONO are presented and discussed.

Keywords: ICT, law, law clinic, legal aid, legal services, courts, ministry of justice

Presentation of heritage topics using immersive technology while gaining STEM-based outcomes

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Abstract

The importance of science, technology, engineering, and mathematics (STEM) in education cannot be over-emphasised. But the importance of this does not diminish the unattractiveness and disinterest of students in STEM subjects. On the other hand, the importance of cultural heritage preservation as one of the sustainable development goals becomes a powerful ally in eliminating the STEM subjects' negative connotations. The living heritage, the mother tongue, is a tool for the transmission of values and information, and it is frequently employed in the preservation and transmission of intangible cultural heritage. By making cross-curricular interdisciplinary connections, STEM subjects become more likable and interesting. Applying immersive technologies with a change in teaching strategies and methods that rely on the specialized sets of terms and expressions makes learning the subjects easier and improves retention. It also increases the interest of the students, makes the learning process more enjoyable and provides them with a better understanding of the subjects.

The aim of this paper is to highlight the value and importance of using immersive technologies, such as augmented reality, as a powerful tool for the presentation of the living intangible cultural heritage of the Republic of Croatia as an integral component of digital storytelling in teaching STEM subjects. The paper is based on research whose main objective was to examine the positive impacts this interdisciplinary approach has on preserving intangible cultural heritage and promoting students' engagement and creativity, as well as identify potential challenges for the application of this methodology to selected STEM subjects.

Keywords: STEM education, language, cultural heritage, augmented reality, storytelling

The Influence of Students' previous Achievements on The Activity in E-Learning Environment

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Abstract

The Covid 19 pandemic led to an accelerated digitization of the education system, forcing teachers and students to increase their use of information and communication technology in their daily lives. Some students and teachers found this easy and coped well in the new learning environment, but some found it challenging and needed additional help.

This paper focuses on investigating the relationship between students' performance in earlier elementary school subjects and their activity in using Microsoft Teams. Some weak positive and negative correlations were found between variables used to describe students' online behavior in MS Teams and their prior academic performance. Additionally, association rules were created to uncover interesting patterns between these elements. The best rule selected showed an association between the great academic success students showed in II. foreign language and their great prior success in music and art.

Keywords: primary school students, association rules, e-learning, digital activity, previous achievement

Creative Teaching and Learning in Extracurricular Activities

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Abstract

Extracurricular activities are an important part of the school curriculum, the co-construction of which should include extracurricular leaders and students, and, if necessary, other stakeholders in the local community. Extracurricular activities are led by pedagogically competent teachers, they are free and available to all students in order to spend their time organized and in a stimulating atmosphere. The co-construction of the curriculum of extracurricular activities should be based on students' interests, encourage different student competencies, and influence students' physical, intellectual, aesthetic, and moral growth. By engaging in extracurricular activities, students develop self-esteem and self-discipline, and teachers create a stimulating classroom atmosphere in which student activity, independent learning and practical action are valued.

The aim of this paper is literature review and presentation of two extracurricular activities, Literary and Robotics, as an example of extracurricular activities in which teachers, students and parents are involved, and through which creative learning and teaching is encouraged. Analysis of documentation for the preparation of extracurricular activities during the four school years in one Croatian primary school in Osijek-Baranja County includes features of creative teachers, creative teaching models and creative thinking techniques used in extracurricular activities. Literary group and Robotics as extracurricular activities offer opportunities, through individual and team work, for critical thinking, practicing problem solving, creating new ideas and creativity, and thus strengthening students' social competencies necessary for the 21st century.

Keywords: creativity, curriculum, extracurricular activities, Literary group, Robotics

Ethical Standards in Research with Persons with Disabilities: Inclusive and Accessible Research Design

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Abstract

The rights of persons with disabilities are guaranteed by the UN Convention on the Rights of Persons with Disabilities (CRPD), which protects their full and equal participation, their freedom of expression and decision-making, and their active participation in the creation of an accessible social environment and research on them. The human rights approach to persons with disabilities was based on the social model, Disability Movement, and Disability Studies.

This paper presents the theoretical principles of the human rights approach and its practical implementation through concrete examples of inclusive and accessible research design for persons with disabilities. The principles of inclusive research are presented using the different levels of participation and the active role of persons with disabilities in the research design. The accessible research design entails concrete proposals for adapting research documents, approaches, and communication with persons with disabilities, as well as examples of assistive technologies for people with different types of disabilities. The types of disabilities included through accessibility proposals include people with physical disabilities and chronic diseases, visual and hearing impairments, intellectual disability, learning disabilities, ADHD, and an autism spectrum disorder.

Also, this paper combines both inclusive and accessible designs to create ethical standards for research with persons with disabilities. These ethical standards should be an integral part of any type of research that focuses on or involves persons with disabilities, which is not yet the case in research practice.

Keywords: inclusive research design, accessible research design, persons with disabilities, ethical standards

Perceptions of distance education in teacher education from the perspective of students and teachers in Hungary

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Abstract

The COVID-19 epidemic has motivated an immediate and effective response from higher education stakeholders worldwide (see Saleh & Mujahiddin, 2020; Toquero, 2020), although they are not new to the online learning environment. In the last ten years, there has been a large literature on online learning in Hungary (see Balázs and Klucsik, 2015; Benedek, 2013; Hunya, 2016; Ollé, 2012, 2013, etc.), which presents good practices in the field of assessment, evaluation and methodology in online learning environments at the secondary and tertiary level and highlights the opportunities and challenges of online learning.

Research on the pedagogical, psychological and methodological characteristics of distance education, the effectiveness and efficiency of online education in teacher education, which emerged due to the Covid-19 epidemic, was launched in spring 2020.

What are the advantages and difficulties of distance education in teacher education experienced by students and teachers? What are the pedagogical, psychological or methodological solutions that help students and teachers to achieve their learning and teaching goals and make their work efficient and effective?

In our research, we sought to answer the question: what successes and difficulties do students and teachers report during distance learning? How do students see good pedagogical and methodological practices that can be transferred to their own pedagogical work in the future? What do the teachers themselves formulate and reflect on? What have they learned and how have they developed their digital competences and methodological solutions?

Method: in our quantitative and qualitative research, we interviewed students and lecturers in a teacher training faculty, with open-ended and closed-ended questions in four phases. The first phase in April 2020, the second phase in June 2020, the third phase in January 2021 and the fourth phase in June 2021. Statistical analysis of the data was carried out using SPSS software, and the answers to the open-ended questions were processed using content analysis. The

categories developed were curriculum organisation, learning methodologies, experientiality, learning support systems, " personalities " in the online space, evaluation.

Results. In addition, the responses of the higher education lecturers showed that the lessons learned in distance learning were reflected in the learning methodologies.

Based on the results of the research, we can say that the following positive experiences are those that are useful from a pedagogical, psychological and methodological point of view and can be applied in the future in the online space: interactivity with interesting tasks, assessment board, building a learning material base accessible online and the use of different learning support systems integrated in the curriculum.

Keywords: teacher education, absence education, challenge, difficulty, reflective experiences

The Attitudes of Croatian Teachers Regarding the Challenges of Classroom Management During COVID-19 Pandemic

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Abstract

COVID-19 pandemic disrupted the business and personal life of each and every individual. Every business sector had to adapt to the "new normal" and change their ways of work. In 2020, teachers substituted their physical classrooms with virtual ones, as well as the means of interaction with students, parents and colleagues from direct communication to communicating via online platforms, and they also replaced the traditional methods of teaching with those in a digital form, which required certain digital competence from teachers, students and parents as well.

The aim of this research was to find out the attitudes of classroom teachers regarding the challenges of classroom management during COVID-19 pandemic. Research was conducted on 107 Croatian classroom teachers. Based on a positivist paradigm, this applied and transversal research via an online survey confirmed that the majority of teachers believed that the pandemic did not significantly affect their way of keeping pedagogical records, and that their digital competence rose to a new level than they were prior to the pandemic. The majority of teachers claimed that the pandemic period left a negative impact on the quality of teaching since a lot of students did not possess a satisfactory level of digital competence necessary for online learning. Teachers believe that they did not have trouble keeping in touch with parents and students, but the means of communication changed. Teachers developed their digital competence independently and through organized learning about digital platforms, and the most frequently used platforms for communication with both students and parents were Viber, Zoom, Microsoft Teams, WhatsApp, Skype and Google Classroom.

Keywords: digital competence of teachers, classroom management, COVID-19, communication

ICT in prison during Covid-19 pandemics: Connection beyond bars and wires

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Abstract

ICT in life is multidimensional concept, applied in various environments. Beside schools, kindergartens, health and social care institutions, it is also present in the prison system. ICT in prison settings durig Covid-19 pandemic helped prisoners and their families to stay connected, providing communication for children and families with their imprisoned member. To find out more about children's view on parental imprisonment and use of ICT in their lives, overall 15 children aged 8 to 16 were interviewed. As main benefit of ICT, children stated a possibility to talk with incarcerated parents regardless epidemiological measures: ICT helped families to overarch problems such as limit per person for contact visits, lack of public transportation, and lack of possibilities for testing when entering the prison for visiting hours. For three children, ICT offered a opportunity to see their parents for the first time, after imprisonment. However, children stated they would prefer direct contact and communication with incarcerated parent, whenever possible. They suggest that children should be provided with more opportunities to talk to their parents when they need, rather when scheduled. Children also expressed a concern that other people could listen their conversation, and to some extention, they don't feel ICT provides enough private space they need, especially when they talk about own problems in schools. To conclude, ICT has a great role for children of incarcerated parents, however it is second-best solution. The advantage should be given to contact vists. Also, it is important to introduce children to their rights such as privacy during video calls, and rules during video-calls, so they could adequately cope with situation of parental incarceration during Covid-19 as much as possible.

Keywords: ICT, prison system, children of incarcerated parents, communication, children rights

ACTIONBOUND - Perspectives as a teaching tool in schools

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Abstract

In this era of rising scientific research and practical usage of information technology it is important to insure adequate teaching tools in our schools. We need to depict those that are motivational and intuitive for the teachers to use and efficient in achieving the desired teaching outcomes. It is important to research the available IT teaching tools in a scientific manner to acquire evidence for acknowledging their usage in schools. This paper brings a practical and scientific outline of various aspects of the Actionbound application as a digital teaching tool. It processes content analysis of the technical organization, the app's usage and possibilities as well as positive and negative aspects and its practical applicability. Several recent scientific research has been analysed in this paper for the cause of assessing the possibilities of educational usage of the app as an educational tool within the educational process. Findings on this digital teaching tool have shown its applicability, features, spectre of possibilities and potential for contributing to the development of the educational process in schools.

Keywords: Actionbound, information and communication technology, teaching tools, schools

Immersive Technology in Education

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Abstract

Teachers around the globe are constantly facing new challenges. They have to professionally develop themselves to be able to teach new generations of students. The traditional classroom teaching and learning environment was especially affected by the COVID-19 pandemic. The teachers' and students' reality changed and education shifted to online teaching. To make teaching and learning more effective and interesting, teachers started using different approaches. One of the innovative approaches in teaching is immersive technology. It can be used in life, but virtual and augmented reality can also be used in education. It can be applied in all school subjects and on all educational levels. This paper examines the differences between virtual and augmented reality in education, as augmented reality is a more recent technology than virtual reality, and analyses attitudes of teachers towards using virtual and augmented reality in educational purposes. The research was conducted through surveys. The sample consisted of primary and secondary school teachers in the Republic of Croatia. The results of the quantitative research were analysed by descriptive statistics. Immersive technology could be used in education because teaching methods should be adapted to 21st century learners.

Keywords: augmented reality, education, immersive technology, virtual reality

Comparative Analysis of Digital Tools for Online Learning

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Abstract

Nowadays we cannot imagine our lives without information and communication technology which is incorporated in all aspects of our lives. The COVID-19 pandemic accentuated the importance of information and communication technology especially in lockdown period. This paper gives theoretical insight into the digital transformation of education and recently very employed term of online learning. The aim of this paper is to conduct comparative analysis of selected digital tools for online learning which are mostly used from the beginning of the COVID-19 pandemic within Croatian educational system. The following characteristics of selected digital tools for online learning were analysed and compared: (1) content presentation; (2) content design; (3) communication; (4) evaluation and (5) activity tracking. The special attention was given to the selected videoconferencing digital tools which enable synchronous communication. Also, the following characteristics of selected digital tools for videoconferencing were analysed and compared: (1) chat; (2) video calls; (3) audio calls; (4) group calls; (5) file exchange and (6) screen share. The new possibilities of virtual reality – VR and artificial intelligence - AI in education were recognized as future trends.

Keywords: comparative analysis, digital tools, OER, online learning

Reading in the digital epoch for Albanian children

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Abstract

This paper aims to reflect the support that ICT provides in the process of learning of the Albanian language by focusing on reading as an important process for young children during learning. Software for learning languages or contemporary concepts such as a digital book has been put in place to improve reading achievement. Also paper analyse softwares that has been created for the Albanian language, which helps children, teachers, and parents as : Albanian language in the digital epoch, Dictionary of the Albanian language, Digital Primer, zeri.app. Hard books reflect only the visual aspect, while digital ones enable multimedia that are more closed to the child. The paper reflects the views and opinions of teachers, parents from qualitative structured interviews at Albanian-speaking areas. Thinking of diaspora will collected and reflected. We plan to perform this analysis to point out the advantages of digital materials and high results that are achieved, when they are associated with hard copy. This association must be included in school curricula because only then, they have massive value. From the results, knowledge is expected on the positive effects that ITC has on learning and reading.

This paper focuses on the use of digital tools to support reading in early Albanian classrooms. Starting from the premise that digital media can support the reading process and increase children's language performance, we analyse the educational software (e.g. Albanian Language in the Digital Age, Dictionary of the Albanian Language, Digital Primer, zeri.app) that have been developed for the Albanian language and are available to children, teachers and parents as support tools. In order to find out how a symmedial use of conventional and digital media affects the reading and language learning process in initial lessons, we conduct semi-structured interviews with teachers and parents. From the results, we derive didactic suggestions for practice.

Keywords: ICT, reading, learning, digital book, Albanian language

Exploring perceptions and experiences of choir singers on their online choir rehearsals

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Abstract

The aim of this study was to investigate the effects of participating in online choir rehearsals. Sixty-seven singers (34 female and 33 male) were invited via email and took part in the study voluntarily. The results showed that the Zoom, Viber, and Skype platforms are most commonly used for online choir rehearsals. The singers believe that not all the technical conditions for holding online choir rehearsals have been provided and that they cannot make the same progress in online choir rehearsals as in classical rehearsals. Members of professional choirs more often than members of amateur choirs emphasize the feeling of belonging and connection with other singers and the opportunity to improve their vocal skills and musical knowledge through online rehearsals of the choir.

Keywords: online choir rehearsals, professional singers, amateur singers

Information and Communication Technology in the Function of Lifelong Learning

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Abstract

Man's need for learning is as old as humanity. The concept of organized education originate in ancient times, and the idea of lifelong learning originate in the middle of the twentieth century. By introducing information and communication technologies into the education system, time flexibility and even time duality have been enabled. A significant contribution is the overcoming of space constraints and enabling inclusion in education for all persons regardless of place and time. The concept of lifelong learning has provided education to all citizens who want to learn by teaching in a variety of institutions and forms, from formal, non-formal and informal. This concept has influenced the rejection of the elitist approach to education, the democratization of education, making it accessible to all, especially the introduction of information and communication technologies (ICT) in education. In addition to the above, lifelong learning arises as a need to raise the quality of life, but also the economic development of a society that is increasingly dynamic and requires learning even after formal education.

Keywords: future of education, lifelong learning, ICT

Challenges and Strategies of E-Learning in Eduction: A New Era of Normalisation

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Abstract

In the recent years, all the world is faced with new form of learning, from traditional learning, face to face, were forced to change in e-learning approach. E-learning become a mandatory methodology to face education process during covid-19 pandemic. The target group of the research are elementary school pupils and teachers in Albania. The first purpose of this research is to identify approaches and tools used in elementary schools during distance learning. The second point of research is identifying level of engagement, satisfaction, and motivation of pupils through this approach of learning. This will achieve by collecting data from questionnaire applied on the pupils and teachers. The analysis consists in presenting the effectiveness of e-learning approach in elementary schools. From the result, even though online learning was applied to pupils, motivation and satisfaction of pupils related this approach is not very high. In the end, this research will recommend some strategies and identify challenges of e-learning in the framework of improving learning process and increase motivation of pupils.

Keywords: e-learning, education system, elementary school, learning process, pandemic situation

Children's Interaction with YouTube Content from Parental Viewpoint

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Abstract

There has been an increase in the amount of time that children spend consuming digital media since the breakout of the COVID-19 pandemic, with YouTube videos being one of the most frequently used sources of fun and education. Despite the fact that YouTube has a plethora of affirmative and didactic contents, provides different perspectives on various issues, as well as a wide range of creative ideas for children and teenagers, recent studies suggest that children mostly watch videos with inappropriate content or content with product placement that aims at gaining more views, leading to greater profit and listing in recommended feeds. In this regard, parents as the first educators of their children can play a significant role.

Therefore, the aim of this research was to determine what kind of contents children follow on YouTube and explore the role of parents in choosing and controlling the content that children watch. The questions addressed in this research relate to whether children follow the recommended videos, entertainment or educational content available on YouTube, and whether in that process they are exposed to the (c)overt advertising, and to what extent. For that purpose, a questionnaire was designed, distributed online and filled in by the parents of children. The results provide insight into how parents perceive children's watching of YouTube videos, their own monitoring role regarding children's interaction with YouTube videos, and their assessment of their educational value. The results also show that young children primarily watch entertainment rather than educational contents.

Keywords: digital advertising, educational video, entertainment video, parental control

Information and Communication Technology (ICT) in Teaching Students with Disabilities During the COVID-19 Pandemic

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Abstract

During the COVID-19 pandemic, the Croatian educational system was facing a major change in educational process. Many countries, including the Republic of Croatia, have developed the concept of remote teaching, the model of teaching without the physical presence of students and teachers. The new model had a significant impact on teaching methods, as well as on the participants in the educational process. Teachers were faced with the challenge of how to fulfill educational goals with the help of information and communication technology, but also how to ensure the prerequisite for the education of all students. Since all students have the right to suitable knowledge created in educational contents individually adapted to them in accordance with their developmental abilities, the use of the information and communication technology is important for educational purposes and to achieve the functional skills of students with disabilities. The aim of this paper is to give insight into the information and communication technology teachers were using while remote teaching students with disabilities, as well as the challenges they were facing. Participants of the research were teachers coming from the following counties: Osijek-Baranja, Brod-Posavina, Pozega-Slavonia, and Vukovar-Srijem. They were given a questionnaire on information and communication technology they have been using. Collected results give insight into the information and communication technology teachers were using while remote teaching students with disabilities and into the challenges they were facing. Obtained data represents contribution to defining guidelines for work with students with disabilities using information and communication technology during remote teaching.

Keywords: remote teaching, students with disabilities, information and communication technology

Encouraging students to read in the digital age

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Abstract

This paper aims to highlight the role and support that technology can provide in the process of familiarizing students with new methods of literary studies or literary criticism in general. The paper aims to highlight the effectiveness of digital magazines in the service of these issues, where it is worth mentioning the speed of communication and filling the gap with the relevant literature in the Albanian language, considering these journals as important alternative sources for promoting reading through critical writing, reviews and interviews with authors and contemporary works of foreign and Albanian literature. In particular, the paper aims to highlight the function of this technological assistance even in the period of numerous human limitations from the pandemic, as well as the desire to make effective every minute of students' time by encouraging them to read literary and theoretical texts through the rubrics such as Agora, Albanology, Artefact, Essays, Literary History, Criticism, Book Clubs (digital magazine "Palimpsest") etc.

Keywords: technology, digital magazine, methods of literary studies, readings**,** communication

Importance of gamification in e-learning for elementary school pupils in Albania

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Abstract

Games are an essential part of the person from the moment it is born. Through the games children learn to find solutions to problems, build confidence and skills. This research purpose is to identify the importance of games in learning process focused on education domain, as a methodology to increase engagement, motivation, and satisfaction of pupils. The paper analyse how important is gamification in e-learning system for elementary school pupils focused on Albania country. To answer this question, we conducted a questionnaire to measure the applying level of gamification methodology in Albanian schools and evaluated the perspective of teachers and pupils towards the methodology of gamification. Our results showed a low level of applying of this methodology in learning process. Results also revealed that teachers and pupils have a very positive perspective related gamification methodology. Also, they think that this methodology improves performance of learning, increase motivation and satisfaction of pupils. From the perspective of the results, this research recommends some applications and e-learning model that have incorporated gamification approach, and emphasize the importance of gamification in e-learning.

Keywords: gamification, education system, elementary school, e-learning, pupils motivation

Challenges of the Montessori method within digital competencies and tools

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Abstract

The development of technology unquestionably encourages the development of other areas of life. The educational field is also developing under the pressure of new technologies and digital tools increasingly used in schools and simplify for teachers to work with students. They encourage student motivation, and it is known that most children today respond positively to technology. Students eagerly participate in activities such as using whiteboards or if they have the opportunity to use their mobile devices in the classroom. As technology and digital tools are increasingly implemented in teaching, especially during the global COVID-19 pandemic and distance learning, the question that arises is how Montessori schools and Montessori society are coping with the development of technology since this is something that is spreading rapidly only after the death of Marie Montessori, the initiator of the mentioned method. Given that Montessori pedagogy focuses on preparing a student for life, it is assumed that this preparation will not be possible without using information and communication technology. It has been implemented and used, and it is impossible to bypass all jobs. The only question left is what Montessori teachers and educators think, to what extent the use of technology would benefit themselves, and to what extent their students. This paper will show how different Montessori schools and experts worldwide perspectives and opinions of using digital technology and digital tools in education.

Keywords: digital teaching tools, information and communication technology, Montessori method.

Selection of an educational mathematical computer game using the AHP method

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Abstract

This paper explains and describes the AHP method and its advantages and disadvantages, describes the selection of mathematical computer games by group using the AHP method, explains the criteria and alternatives for choosing a mathematical computer game, describes AHP decision making and group decision making results.

For the needs of the research, didactically prepared computer games in the field of mathematics were selected. The basic criteria for selecting the game were: compatibility with the chronological age of children and compliance with pedagogical criteria. Only one game was needed for the research, and it was selected using the AHP method, which was also used to create a model of pedagogically and methodically acceptable computer game for use in teaching. This game, for the research, was important to choose so that the mathematical computer game matched the objectives of the research. The research itself determined the differences in motivation and content acquisition in students with regard to the approach to teaching. It was determined which approach gives the best results. The students of the 4th grade of primary school were divided into three subgroups of 30 students: the one who processed the curriculum in the classical way, the one who processed the curriculum only by playing games and the one who combined the previous two models. As there is a great availability of games that students could play, choosing an educational math computer game was extremely important. Therefore, this paper deals with just that: group decision making AHP method.

Keywords: AHP method, math, education, computer games

E-Learning in Developing ICT Skills of Future Engineers

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Abstract

The aim of the research is to analyze the emerging didactic model in universities, determined by the integration of Information and Communication Technologies (ICT) into Education. The key component of the model is the e-learning approach. The adoption of this model was accelerated by the pandemic situation. The education institutions were challenged to adopt other ways of delivering study programs than face-to-face: distance, online or blended courses.

The paper presents the practice of implementing e-learning at the Technical University of Moldova (TUM); it highlights the strategies related to teaching & learning & assessment; the professional competences that teachers must demonstrate in the digital age; the impediments to the realization of this approach. The experience is demonstrated on the basis of transposing content for the course "Computer networks" into digital format for the bachelor students. A special focus was made on developing the ICT skills of future engineers, required for their professional careers.

The research revealed that the strong digital competences, the content knowledge and didactic competences of teaching staff are crucial in conceiving and delivering the e- courses. Different resources were offered – registered videos with teacher lectures and guides for laboratory tasks; case studies; presentation of the materials in a progressive difficulty. Development of students' learning and technological skills was facilitated by real problems similar to the work context; by case studies that offered different learning experiences; by the participation of the students in the construction of knowledge.

Keywords: ICT skills, e-learning approach, e-course, distance education, blended education.

Attitudes of future teachers about the application of information and communication technology in music teaching

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Abstract

This paper presents the results of research conducted to determine the opinions of future teachers on the importance and possibilities of applying information and communication technology in music teaching. According to the results of the research, information and communication technology is important for teaching music, especially for conducting music listening activities and music games, and students are glad to participate in activities that use information and communication technology. This makes the contents in music teaching easier to master, and it is easier to achieve an interdisciplinary approach in music teaching. Future teachers feel that their competencies for conducting music activities in which information and communication technology is applied are not sufficient. Therefore, it is necessary to further educate teachers and students to carry out such activities in music teaching. Primary education teachers need to keep pace with the development of technology, but it is important to ensure that the usage of information and communication technology is effective and age-appropriate.

Keywords: future teachers, information and communication technology, music teaching, primary school

Adopting the use of assistive technology in a child with multiple disabilities

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Abstract

Assistive technology represents various forms of equipment, programs or products used to increase, maintain or improve the functional abilities of people with disabilities. For children with multiple disabilities, the use of assistive technology is an opportunity to engage in various activities and consequently improve the quality of life. The aim of this paper is to present an example of adopting the use of assistive technology in a child with multiple disabilities and factors that contribute to this process from the perspective of an educational rehabilitator during the rehabilitation treatment period. After studying theoretical assumptions of the use of eye gaze technology and the challenges that arise in practice, problem areas were identified. The data was collected by a questionnaire during a semi-structured interview and then processed with thematic analysis of the content. The results point to progress of a child in communication contributed to adopting the use of assistive technology. Furthermore, the results point to the contribution of educational rehabilitation assessment and selection of assistive technology, application of pre-training and training, customization process and providing education and support to the parents of a child with multiple disabilities. The findings indicate an important role of educational rehabilitation work in the adoption of the use of assistive technology in a child with multiple disabilities.

Keywords: assistive technology, eye gaze technology, multiple disabilities

The influence of online teaching on the social status of the children protected by SOS Children's Villages in Croatia

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Abstract

SOS Children's Village accepts a challenging and praiseworthy task of returning balance to the lives of abandoned, impoverished, and physically and spiritually traumatized children. Among the most critical places and factors of social integration of the children protected by SOS Children's Villages are schools whose functioning and inclusive culture they nurture represent the backbone of their social status and their sense of belonging to the community of peers. As a vulnerable and socially marked group, children protected by SOS Children's Villages are at constant risk of rejection and isolation from peers.

The COVID-19 pandemic at the global level has led to a significant shift in understanding and maintaining the teaching process. It has undoubtedly accelerated changes in teaching and the use of ICT in teaching. Today's online teaching model as a separate concept coexists with traditional ideas of classroom/non-classroom teaching, project teaching, field teaching, etc. For the past two and a half years, online teaching has served to a greater or lesser extent as a substitute for traditional teaching in school. The question arises as to what extent such a teaching model affects the social status of primary school pupils protected by SOS Children's Villages in Croatia. For this paper, the focus group method examines the attitudes and observations of SOS Mothers of school children from SOS Children's Village Ladimirevci on changes in social contacts between their proteges and other children from the local community.

Keywords: online teaching, pupils, social status, SOS Children's Village

The introduction of digital avatars in real-life classrooms in the Republic of Croatia

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Abstract

As a significant step in the digital transformation of the schools in the Republic of Croatia, the Ministry of Science and Education has cooperated with the Croatian Academic and Research Network (CARNET), distributed preinstalled tablet computers to the pupils, with a start in the year 2020.
During the Covid-19 pandemic, classes were held face to face, online, or combined, depending on the situation in specific schools and classes.
More resourceful and agile teachers didn't hesitate to implement avatars in their classes using tablets when the occasion arose.
Human surrogates, also known as avatars, are any objects that act as a substitute for a human. An avatar is a manifestation of the human who inhabits it and controls it. Its constraints determine the range of desired behaviors.
The paper explores how avatars can improve the teaching process in real-life classrooms.

Keywords: avatar, human surrogate, physical avatar, real-life classroom, tablet

E-learning during the COVID-19 pandemic

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Abstract

Globalization and rapid changes in society also require adjustments in the field of science and education. These new changes bring a number of innovations in the field of education. One of them is certainly a global pandemic of the corona virus (COVID-19). Until then, no one had any idea how much an unknown virus would change the world. Changes were necessary in all aspects of life, including the education sector. Students, teachers and parents were exposed to the changes. The previous form of learning and education had to adapt to the new situation. This paper will show how the students have adapted to cope with the new teaching model, which ICT technology was used in everyday school obligations, what are their experiences with virtual teaching and classrooms, what are the advantages and disadvantages of online learning/teaching, etc. In the conducted questionnaire on a sample of 99 students, the obtained results give only an insight into the students' attitudes about online teaching. All classes were conducted through the MO Teams platform and virtual channels. Most students and teachers were introduced to this platform for the first time, as well as many other e-tools. The paper will show how the School of Economics and Administration Osijek organized classes in a virtual environment and how the educational process runs smoothly using ICT technology. ICT technology has globally "taken over" the world and entered our daily routine, because without it, education in a pandemic would not be possible.

Keywords: education, ICT technology, pandemic, students, virtual teaching

Challenges of online courses

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Abstract

The challenges of modern society are increasingly complex, and human action is supported by technology in all areas of work. Great technological advances have also affected education, which aims to prepare students for active action in the modern community. Online learning has been developing in the world for years, and today it is available to everyone and is used every day, not only in the teaching process, but also in extracurricular and self-initiated learning. Online learning encompasses all scientific disciplines and is accessible to almost all segments of society. There are numerous advantages of online learning, such as raising the quality of educational content, availability of materials, facilitated application of educational materials, multimedia learning tailored to specific needs and ways of learning. Online learning often involves the acquisition of content at a distance and is a very effective way of learning since it is not limited to a specific time and space, and can include a larger number of students. Multimedia is one of the advantages of online learning because it involves the connection of visual, auditory and audio-visual content, facilitates the understanding of abstract and complex concepts and positively affects memory and motivation to learn. Digital educational technology affects the motivation of students, but also the motivation of teachers, who facilitate the work and transfer of knowledge. To prepare for online teaching, it is important to constantly develop digital competencies of lecturers, in order to avoid possible negative aspects of online learning and multimedia in non-lifelong learning. The aim of this paper is to point out the positive and negative aspects of online learning and the impact of technology on motivation and facilitating the adoption of new content.

Keywords: network learning, e-learning, ICT technology, motivation, education

Overview of ICT and Sport

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Abstract

ICT affects the development of sports. Thanks to this cooperation, the high results achieved in various disciplines have been improving from time to time, in addition to perfecting the training and technique of athletes. This paper will examine how much ICT has helped in the development of sports, but also how much it has adapted to them. To derive the results required by this paper, several scientific studies conducted by various researchers for this purpose have been consulted. In athletics the use of the photofinish; the use of the cardiometer with batteries (1982); the invention of GPS (2003) ; the VAR equipment used today by the referee in football, has made it possible to obtain a lot of important information in the service of sports. From the processing of information on the analysis of factors that are argued in this paper, it appears that the use of ICT in sports activity, has a positive impact on performance in sports and consequently on achieving high results.

Keywords: ICT, sport, results, performance

Attitudes of Music Teachers towards organizing Distance Learning in the Context of Lifelong Education

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Abstract

At the time of the Covid-19 virus pandemic, all teaching, including music, underwent sudden and unexpected changes. The focus on technology and its use have emerged as a major challenge for educators. Teacher competencies have always been crucial in educational work, but they have been particularly pronounced during distance learning. Distance learning is characterized by physical distance and complete digitalization of the teaching process. This paper is aimed at determining the attitudes of teachers of Music Culture and Music Arts regarding the conduct of distance learning and their self-assessment of their own knowledge and skills for its realization. Data was collected through an online survey during the 2021/22 school year. 83 teachers of Music Culture and Music Arts were included in the research. The results showed that teachers believe that they receive satisfactory support from the school in the implementation of distance learning, that they have access to tools for organizing such classes, and that they are satisfied with their quality and role. At the same time, only a quarter of teachers believe that there are a sufficient number of courses and workshops in this area organized by the school, and a third also think about courses in the environment in which they live. Also, the respondents are of the opinion that they have competencies for conducting distance learning, but they believe that they did not acquire these competencies during their academic studies. Furthermore, most teachers believe that students do not acquire the same knowledge as in the classroom, and that grades are not a true reflection of their knowledge, so they grade them milder than usual. Finally, the results showed that none of the sociodemographic variables (gender, years of service, and school location) were statistically significantly related to their attitudes and assessments of their own competence ($p>0.05$). The results of this research indicate the need for lifelong learning so that teachers can respond to the challenges of contemporary pedagogical reality.

Keywords: teachers of Music Culture and Music Arts, distance learning, lifelong learning

Differences in early and preschool children when using mobile devices in relation to their age

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Abstract

We are at the time when mobile devices and the Internet have become a part of our everyday life, not only for individuals, but for entire families. Mobile devices and the Internet have been involved in children's lives from an early age and sometimes it seems like children are extremely skilled at using them.

The aim of this research was to examine the knowledge and habits related to the use of mobile devices of children of early and preschool age from the perspective of children and their parents. Special emphasis were placed on differences in relation to the age of the children. The sample of children consisted of two groups of respondents attending public kindergartens, one group consisted of children aged 3-4 years, while the other group consisted of children aged 5-6 years. A total of 30 children and their parents participated in the research, 15 children in both groups. Data from parents were collected in writing through a set of questions about the habits of using mobile devices in their family, while data about children, their knowledge and habits were collected through interviews.

The research findings suggest differences between age groups in terms of owning a mobile device, the ability to use a mobile device outside the home, knowledge of commonly used applications, downloads and understanding of control over downloading applications, content and search methods on YouTube.

Keywords: mobile devices, early and preschool children, parents, online security

The impact of online learning on child development and reading skills

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Abstract

For the past two years, and the current situation is still ongoing, humanity has faced a global pandemic that has forcibly directed real life to the virtual. Socialization and contacts are kept to a minimum, and the virtual world is growing and evolving. The virtual world has entered all pores of society, including education, so the teaching process was doomed to virtual online teaching. Although digitalization is an unstoppable process, the question arises as to how much this process affects the reading abilities of us humans, especially children. It has been proven that man mastered the ability to read relatively late only with the invention of the script thousands of years ago. However, scientists have found that reading in depth is lost with the advent of new media, primarily screen reading. According to Maryanne Wolf, we face a significant challenge of developing a biliteral brain that can read and understand text written on paper and digital media. The presentation will show how digital media and online learning negatively affect the development of children's reading skills and what needs to be done to enable children to successfully read and understand what is read in the digital world in which they live.

Keywords: online learning, biliteral brain, reading development, reading skills, Maryanne Wolf

Impact of ICT on children's physical activity - case study in Albania and Kosovo

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Abstract

Physical activities in children are a necessary and indispensable basis for their overall development. Today, this activity is more limited because now at this age is also greatly influenced by the development of ICT, because they practice various computer games and use social networks a lot to "have fun", etc., where this reduces the sports-recreational activities , which then affect their poor development. The paper deals with the treatment of some research related to the impact of ICT on the physical activity of children, in schools by age, gender, etc. Also, the causes and consequences of the excessive use of technology will be presented, as very defined and important factors for starting sports from an early age to specialization to the trained athlete actors. Recommendations and conclusions have to do with the state of appropriate and timely solutions by teachers, trainers, professors of physical education-sports and health, for a more professional and scientific mentoring where the role in this development of ICT should have the school, for to have the right effect on success, affirmation, progress in further work.

Keywords: ICT, physical activity, physical education, school, research

The Importance of Digital Inclusion for People with Intellectual Disabilities

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Abstract

Since COVID-19 pandemic, social distancing and restrictions even more highlighted the importance of ICT (Information Communication Technology) and digital tools as a lifeline. Research shows that people with intellectual disabilities (ID) are left behind in a time of even greater need for participation in the digital society. The aim of this paper is to provide an overview and insight into scientific knowledge about the importance of digital inclusion for people with ID. ICT and digital inclusion for everyone is one of the WHO sustainability goals. There are approximately 8 mil. people with ID in Europe, who in the vast majority don't have appropriate conditions and opportunities to participate in the digital world. People with ID encounter different barriers (individual learning characteristics, lack of support, education, and training, financial and economic barriers, etc.) to fully embrace digital technology, which may be overcomed with appropriate support and adaptations. According to research, there is a great value of incorporating ICT into the lives of people with ID for promoting mental health, quality of life and enhancing educational and social inclusion. ICT can provide opportunities for personal development, education, employment and social relationships. Despite all barriers, research and practice show that the digital inclusion for people with ID is possible and at the same time it challenges societal stereotypes and discrimination. This research paper precedes the development of accessible digital skills education app/ programme to empower people with ID in Croatia as part of EU "Digi-ID Plus" project granted by European Institute of Innovation and Technology (EIT) Health.

Keywords: people with ID, ICT, digital inclusion

Use of Digital Technologies on Working With Potentially Gifted Children on Early and Preschool Institutions

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Abstract

Following theoretical, conceptual and curricular frameworks in the educational system, along with the inclusion of children in the regular educational work, a special short programme for potentially gifted children in the institutions of early and preschool education is created. In their personal and professional development from the beginner's fields of interest to the independent creative work, early childhood education and care professionals become co-creators of the educational practices that motivate and develop children's interests, knowledge and skills in the context of the kindergarten, in the programme for working with potentially gifted children. By making new experiences and using reflective learning, digital competencies, and lifelong learning in the field of digital technologies when working with potentially gifted children, early childhood education and care professionals gain self-confidence for thinking and acting and develop their attitudes, improving the quality of the educational practice and the curriculum of the early and preschool education. The roles and the activities of the early childhood education and care professionals are derived from the activities of the children and imply fine adjustment of the early childhood education and care professionals to the necessities and activities of the potentially gifted children, based on their systematic observation and the reflection of their personal practice. It is necessary to monitor the development of the children, observe the monitoring as the process of continuous change and growth and evaluate it with the help and support of the institution. As working with the potentially gifted children is a dynamic period of enriching the programme with contents and activities, the poll questionnaire was used to question the perception and attitudes of early childhood education and care professionals on supporting the learning and development of the potentially gifted children by using digital technologies in programmes. Early childhood education and care professionals and principals from five counties of Slavonija participated in this research.

Keywords: educational work, giftedness, digital competences, child's interest, reflection

Information Communication Technologies in education and teaching

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Abstract

It has been a while since ICT became part of many fields in human life and education. Students born in 2010. are called digital natives or Alpha generation because technology has been part of it since the first day of their lives. These students are now in the 4th grade of primary school in the Croatian education system, and teaching them the old school way is not attractive to them. They cannot imagine their everyday lives without technology, social media, and gadgets for socializing and learning. They search for information on many different platforms and internet sources, so it is crucial to learn to use it correctly. The primary goal of this paper is to research safe ways for students to search and use the information on the internet, respecting all author's rights, checking the credibility of information, and considering ethical issues of using ICT in their lives and education.

Keywords: Alpha generation, ICT in teaching, authors rights, ethics in ICT

Online Administration and Psychometric Characteristics of the Croatian Version of the 7C Vaccination Readiness Scale and The Attitudes Against Socializing With (Non-) Vaccinees Scale

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Abstract

The Croatian version of 7C vaccination readiness scale and the new Attitudes Against Socializing with (Non-) Vaccinees Scale have been applied online. The aim of this study was to explore their psychometric properties and whether online application is justified. The study involved 1806 participants (76.3% female) with an average age of 35.95 years (SD = 11.66). In order to examine the psychometric characteristics of the 7C vaccination readiness scale, a confirmatory factor analysis was conducted with the assumption of a bifactor model. Based on the modification indices, the final model suggests the measurement error covariances for the first two Complacency items, which both address the need for vaccination, and for the first and third Compliance items, which both address the need to punish non-vaccinees. This final model has a satisfactory fit ($\chi 2 = 1728.24$; $p < .001$; GFI = 0.910; CFI = 0.958; TLI = 0.951; RMSEA = 0.069 (0.066-0.072)). The reliabilities of the factors are satisfactory (.73 to .97) with the exception of the reliability for the Calculation (.60), which will be further commented on in the paper. An exploratory factor analysis was performed for the Attitudes Against Socializing with (Non-)Vaccinees Scale, which had 13 items in its original form. The analysis suggested a version with 11 items distributed in Attitudes against socializing with non-vaccinees (eight items; $\alpha = .93$) and Attitudes against socializing with vaccinees (three items, $\alpha = .70$) and explained 66.89% of the variance. The data suggest satisfactory psychometric characteristics of these scales and the appropriateness of their online application. The challenging items and the possibilities of eliminating these challenges will be discussed thouroughly.

Keywords: online administration, vaccination, psychometric properties

Physical activity and health-related mobile applications

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Abstract

Physical activity nowadays involves the use of various health- and exercise-related applications on smartphones and smartwatches. This study aimed to examine the relationship between the levels of physical activity and the usage frequency of smartphone and smartwatch health-related applications. A total of 128 kinesiology and physiotherapy students filled out The International Physical Activity Questionnaire – Short Form (IPAQ-SF) and answered questions about the frequency of using health-related applications. Based on the IPAQ-SF, the domains of physical activity were calculated: physical activity of vigorous-intensity, physical activity of moderate-intensity, and walking. It has been found that a total of 79.7% of participants use health-oriented applications and functions on their smartphones. They mostly use smartphones to track the type and amount of physical activity – 40.6% of them is using this function more than five days a week. Vigorous physical activity is positively related to smartphone applications for exercising (timers, exercise programs), a stopwatch, and programs for running. Participants engaged in moderate physical activity, and those who walk more use the stopwatch on their smartphones for exercise more often. Just over half of the students use a smartwatch (53.1%). They use them for tracking the type and amount of physical activity (33.6%) and heart rate monitoring (26.6%) more than five days a week. Positive correlations were found between vigorous physical activity and using the smartwatch for monitoring sleep quality and hydration, and using it as a stopwatch while exercising. Results indicate that students use more often applications on their smartphones than on smartwatches, and for slightly different reasons.

Keywords: physical activity, health-related applications, exercising, mental health

Video Lectures to Support Teachers in Distance Music Learning

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Abstract

Until recently, ICT was only an auxiliary tool in classical learning. Since March 2020, classical learning has been periodically replaced by distance learning requiring ICT as a whole due to the COVID-19 pandemic. To facilitate distance learning with the use of ICT, the Ministry of Science and Education, in cooperation with the Education and Teacher Training Agency has provided support to teachers in several aspects, one of which is video lectures. Video lectures for the subject Music Culture are published every second week of the school year on the channel "i-teaching". The aim of this paper is to encourage teachers to think about implementing video lectures during distance learning. For this purpose, the author analyzed video lectures published from the 7th September 2020 to 15th April 2022, made for Music Culture from the 4th to 8th grade of primary school. The research showed the following results: there are 110 published video lectures so far; the number of views on each video lecture can be connected to the pandemic situation and the week of the publishing; the longest and shortest video lecture differ up to almost 30 minutes, and almost every video lecture requires additional use of ICT. Video lectures can and should be combined with other learning resources. The author proposes expanding this research on video lectures for the subject Music Arts as well as analyzing whether video lectures follow the Curriculum.

Keywords: COVID-19, distance learning, information and communication technology, Music Culture, video lectures

Digital Competencies of Educators

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Abstract

One of the goals of the National Curriculum for Early and Preschool Education is to encourage the adoption of basic competencies for lifelong learning.

Therefore, the role of educators is to teach the child the appropriate model of using modern technology, the application of programs and forms of learning in the everyday educational process. In order to meet the set goal, it is expected from the educators to have developed digital competencies, which proved to be especially significant during the lockdown and the COVID 19 corona virus pandemic.

The aim of this paper is to present the opinion of 150 educators of early and preschool children in Zadar County on the acquired digital competencies and the need for further training that would be responsive to the needs of educational practice.

Keywords: digital competencies, educators, educational process

University E-Education of future Preschool teachers in the age of the Covid-19 Pandemic

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Abstract

Globalization and technological progress and social and economic changes have led to intensive online communication as well as new e-study programs in the new e-learning environment. In addition, the new extraordinary circumstances caused by the Covid-19 pandemic have led to the social isolation of the entire population, changed the teaching process, led to new experiences of students' learning and teaching. In higher education, these circumstances have changed the teaching process and led to changed conditions of study in the material and social environment. The paper discusses students' attitudes towards the new conditions of study in Osijek, Zadar and Slavonski Brod, which are reflected in student satisfaction and workload, their digital skills and student expectations. There are more and more online study programs, but it should be noted that the specificity of the study of Early and Preschool Education is the need for direct participation in the educational process of the curriculum of early and preschool education. The participation of students in the educational process is an integral part of methodological exercises and professional practice, and is reflected in the acquisition of professional competencies and application in direct educational work with preschool children and cannot be neglected.

Keywords: Covid-19 pandemic, digital competencies, e-teaching, students of early and preschool education, study conditions.

Survey on Expert Guide

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Abstract

This project is a Web application to select the best college, which has been made so that a student can easily get the wide range of choices in their career. As we know, various students evaluate their career through college and they find themselves either compromising on their dreams or being unable to decide between competing options. Instead of a clear path, students are at best an independent who will survive and thrive only with a constantly evolving skill-set. So basically, this app helps the students to find their right career profiles. An admin or user sign-in to the expert guide account and after signing in they fill in their details such as, cut-off percentage, category, gender, state etc. When the student fills in their details, they will get the details of the colleges which they can apply for or take admission. They will get those particular colleges that are matched on their details or merit-basis of various competitive exams they have given. Finally, the content concludes that it will simply help students to choose the right college.

Keywords: Machine learning, Gale Shapely Algorithm, Jupyter Notebook, DropBox, KNN

VITION-BUY, an AR / VR Powered E-Commerce Website

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Abstract

Looking into the colossal spread of electronic commerce or ecommerce business throughout the globe, there is still plenty of room for improvements and new innovations that could not only mold the current scenario from a business perspective but also add on to user experience and their engagement in the product. The purpose of this research is to explore the idea of using computer vision not only to improve the user experience but also enhance the quality of the product via a "try on" simulation. This could bring subtle but revolutionary change into the e-commerce business and more and more tech giants could adapt it and bring success to the idea. Our idea basically relies on the fact that whenever a person makes a decision to purchase anything online, there is always a hesitation that keeps them away from making the purchase - "how would it look on me if I buy it?" or "How would the sofa look in my room if I place it at that corner?". We have come to the conclusion that the aforementioned problem can be solved if there is a way to create a virtual reality in which the product could be teleported to the user and placed on the canvas of virtual reality as per their wish. We have used Dynamic HTML and ReactJS to create the web application for standard E-Commerce applications and integrated OpenCV (Computer Vision) to provide Augmented Reality and Virtual Reality to the user. We will host the application as well as the backend on any cloud service provider of our choice and rely on its computation power to deliver the result of AR/VR to the user, so that there is no need for any prerequisites and programming knowledge required to the user.
Anyone could have access to the application as long as they have a reliable internet connection and web browser.

Keywords : Augmented Reality, Virtual Try-On, VITION, E Commerce, OpenCV, Electronic Business

Sveučilište Josipa Jurja Strossmayera u Osijeku

Fakultet za odgojne i obrazovne znanosti

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