

Editorial

Digital challenges to empower universities' implication in the community

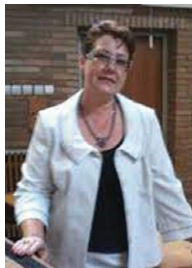
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1. Introduction

Universities have been recognized as vital players in the process of transferring knowledge, innovation, and technology from academia to companies, non-profit organizations, and the public sector, by community engagement. If in the past, universities covered this role by granting patents to external companies, but the situation has changed profoundly. Today, universities are dedicated to the creation and promotion of spin-offs and start-ups, and to the development of various projects with different stakeholders as a response to social pressures on accountability. The Triple Helix paradigm has been transformed to a N-Tuple system or model [1, 2].

Human resources management system is impacted by the accelerated digital transformation. Thus, the recognized digital “wind of change” has a positive impact on participation, involvement, and engagement of universities in communities to promote ‘active citizenship’; through digital transformation of their educational services and their media communication, universities have increased their visibility, academic communities are more engaged in communities, in supporting a more efficient dialogue with different actors of civil society [3]. The topic is of great interest in the post-pandemic context, also sup-

ported by the new innovative practices in human resources management (e.g., remote work, online and hybrid activities and education practices, hybrid conferences, extended international networking, etc.).

Furthermore, emerging technologies (e.g., machine learning, cloud applications, the Internet of Things (IoT), social web, mobility, robotics, artificial intelligence, and blockchain, among others) are estimated to enable a technological revolution that will transform all human activities and systems, including those of universities. These new technologies have already generated creative ways of producing and offering high quality goods and ubiquitous service. In addition to the technological innovations impact on human side of enterprises, the “human style of work” has been changed together with the work practices (as previous mentioned innovative practices in human resources management) (as anticipated by [4, 5]). Thus, several questions arise:

- What digital challenges universities face?
- What is the impact of emerging technologies on university activities?
- Are university human systems prepared to promptly act in the new digital era?
- What are the communities’ expectations about universities in the digital age?
- How can digital transformation help universities improve awareness of STEM education and its importance in the community at large?
- Can digital transformation help universities in community-based learning or service learning for improved collaboration with the community?

In addition to the above, it is important to note that the digital transformation of universities not only affects their internal operations, but also their external relationships with industry and the community. The integration of new technologies into the research and development process of universities has led to a rapid increase in knowledge production and technological advancement, which in turn leads to stronger partnerships with industry. In addition, digital transformation has enabled universities to expand their reach beyond traditional academic boundaries and promote lifelong learning and skills development through online courses and programmes. This has not only increased the accessibility of education, but also improved the skills of the workforce, leading to a more efficient and innovative industry. Finally, digital transformation has also strengthened the community by providing access to information and knowledge, thus promoting informed decision-making and civic

engagement. In summary, the digital transformation of universities is a key factor in increasing their impact on industry and society and fostering innovation and social progress.

The papers published in this special-thematic issue seek to answer most of these questions by presenting examples, best practices, and recent studies showing how emerging technologies are converting universities into leaders of society transformation to the digital era and how professional life has been changed.

In this dynamic context, studies related to the challenges and opportunities for rethinking and reshaping the universities' human systems considering their roles and functions in modern education were encouraged as valuable contributions to the scientific debate of this special issue. Having a large international audience (by promoting the special issue in different Erasmus+ projects' consortia and communities), a group of interesting articles has been finally approved for publication, most of them being the result of international collaborative work and innovation. We would like to acknowledge the projects that support this special-thematic issue development:

- MUST project: “Multimedia Competencies for University Staff to Empower University-Community Collaborations” funded by the ERASMUS+ grant program of the European Union during 2020–2023 (2020-1-RO1-KA203-080399);
- INNO3D project: “3D Printing Support Service for Innovative Citizens” funded by the ERASMUS+ grant program of the European Union during 2019–2023 (2019-1-IE203-000693INNO3D);
- DECIDE project: “Developing Services for Individuals with Disabilities” funded by the ERASMUS+ grant program of the European Union during 2018–2021 (598661-EPP-1-2018-1-RO-EPPKA2-CBHE-JP);
- IPEDU project: “Introducing Intellectual Property Education for Lifelong Learning and the Knowledge Economy” funded by the ERASMUS+ grant program of the European Union during 2020–2023 (2020-1-IE02-KA203-000758);
- DIGITOOLS project: “DIGITOOLS – Innovative Tools for Enhancing E-Learning Solutions in Universities” funded by the ERASMUS+ grant program of the European Union during 2021–2023 (2020-1-IE02-KA226-HE-000781);
- PRUDMET project: “Pandemic’ Response Using Digital Media and Technology in Higher Education and Training” funded by the ERASMUS+ grant program of the European Union during 2021–2023;
- DigiVET project: “Digital Media for VET in SMEs: Online learning of digital media competences for SMEs to empower workplace learning” funded by the ERASMUS+ grant program of the European Union during 2019–2022;
- Inclusive University project: “Inclusive University – A Set of Tools Dedicated to HEI for Better Respond to Disabled Student’s Needs”, Erasmus+, KA2: Strategic Partnerships, 2019–2021;
- VALEU-X project: “Virtual Albanian European Universities Exchange”, Erasmus+, KA2: Capacity Building in the Field of Higher Education, 2020–2022;
- LittleBigEntrepreneurs project: “Design Thinking and Gaming Applied to Entrepreneurship Education”, Erasmus+, KA2: Strategic Partnerships for School Education 2020–2023;
- InterAct project: “Internationally active - professionally valuable project”, Erasmus+, KA2: Strategic Partnerships for Higher Education, 2020–2023;
- InterAct project: “Internationally active – professionally valuable”, Erasmus+, KA2: Capacity Building in the Field of Higher Education, 2020–2023.
- RE-CREW project: “The innovative framework for the European small businesses to perform recruiting, get ready to market and express their full potential”, Erasmus+ KA2, Cooperation partnerships in vocational education and training (2022 – 2024)
- Care4You project: “Care for you – improving soft skills of seniors’ caregivers”, Erasmus+ KA2, Cooperation partnerships in youth (2022 – 2023)
- RespectNET project: “Respectful Communication through Media Education Network”, Erasmus+, KA2: Cooperation partnerships in higher education (2021 – -2024)
- UnInLeCo project: “University and Business Inclusive Digital Learning Coaches”, Erasmus+, KA2: Cooperation partnerships in higher education (2021 – 2023)
- VirtualEDU project: “Upskilling and certification scheme for virtual educators”, Erasmus+, KA2: Cooperation partnerships in higher education (2022 – 2025)

This thematic issue was supported by two conferences:

- *SIM 2021: 16th International Symposium in Management* (<https://trivent-publishing.eu/old/sim2021/>) while some of the published papers in this issue were presented at the conference sessions focused on “*Management, Innovation and Entrepreneurship in Challenging Global Times*” (22–23 October 2021, Timisoara, Romania) organized by Politehnica University of Timisoara, Romania and the West University of Timisoara, Romania;
- *ErgoWork 2022 – “International Conference on Ergonomics and Workplace Management”* (hybrid) organized by Romanian Society on Ergonomics and Workplace Management (ErgoWork) in partnership with other ergonomic associations and universities on 16–18 June 2022 (<https://www.mpt.upt.ro/cercetare/conferinte/ergowork.html>). Some of the papers contributions for this thematic issue have been presented at the conference.

2. Presentation of the thematic special issue content

In the following, we shall provide a brief overview of the articles included in this thematic special issue, by clustering them in three specific topics.

Topic 1: Students' satisfaction, behaviour when operating in the online learning environment, with ICT tools, and social network

Gharaibeh, Malik Khlaif. ‘Measuring Student Satisfaction of Microsoft Teams as an Online Learning Platform in Jordan: An Application of UTAUT2 Model’. 1 Jan. 2022:1–10.

This study uses five variables from the Unified Theory of Acceptance and Use of Technology (UTAUT2) model namely; performance expectancy, effort expectancy, facilitating conditions, social influence, price value, as well as two new variables which include student satisfaction, and flexibility to study the learning satisfaction with Microsoft Teams. From the methodological point of view, 520 questionnaires were distributed to Yarmouk and Ajloun National Universities (in Jordan) students to collect the required data, that were analysed

using Smart PLS. The research results demonstrate that showed that performance expectancy, effort expectancy, social influence, price value, facilitating conditions, student confidence, and flexibility are important indicators of satisfaction with Microsoft Teams.

Khanchel, Hanen. ‘Factors Affecting Social Network Use by Students in Tunisia’. 1 Jan. 2022:1–18.

The article presents a complex study aiming to bring a better understanding of technology use in the educational context. More specifically, author investigates the determinants of digital social network (DSN) acceptance by Tunisian students and the effects of this acceptance on students' outcomes in the presence of social isolation as a mediating variable and fear of COVID-19 to ensure the continuity of university pedagogy. From the methodology perspective, this study employed structural equation modeling through the Partial Least Squares Structural Equation Modeling (PLS-SEM) and condition process modeling. Furthermore, the research found that Social Influence (SI); Effort Expectancy (EE), Facilitating Conditions (FC), and Performance Expectancy (PE) have a significant and affirmative effect on the behavioural intention (BI) and influence of behavioural intention on digital social network (DSN) user behaviour in learning (UBL). Furthermore, Social Isolation (SIS) as a mediating variable and fear of COVID-19 (FOC) has a significant effect between dimensions of adjusted Unified Theory of Acceptance and Use of Technology (UTAUT) model and behavioural intention of learning by Digital Social Network (DSN) applications. The new adjusted conceptual model is a significant contribution to the current knowledge, which will enhance the dimensions of the actual unified theory of UTAUT model. Moreover, the findings have significant implications for educators and decision-makers involved in designing learning through DSN applications for implementation in universities.

Shirish, Anuragini, Verstraete, Nina, and Tantan, Olfa Chourabi. ‘The Impact of ICT Characteristics on Students' Learning Outcomes During COVID-19 Lockdown Period: The Crucial Role of Techno Eustress Perception’. 1 Jan. 2022:1–14.

This article leverages the person-environment fit and technostress literature to examine how usefulness and reliability as demand-ability stressors of information and communication technology (ICT) tools can positively impact learning outcomes among remote learning students. Techno eustress percep-

tions are evaluated as a crucial mechanism for theorizing the positive impact. The method used was the survey based on a designed questionnaire during the lockdown period to test this model. Research results highlight the ICT characteristic of usefulness as salient in contributing to student learning outcomes as it promotes techno eustress. Authors considered that this is the first study to demonstrate a positive impact of ICT characteristics on student learning outcomes via techno eustress perceptions.

Ng, Poh Kiat et al. 'Blending a Sweet Pill to Swallow with TRIZ and Industry Talks for Enhanced Learning During the COVID-19 Pandemic'. 1 Jan. 2022:1 – 16.

This study investigated the influence of industry talks and TRIZ (acronym for the "Theory of Inventive Problem Solving of Genrich S. Altshuller) on learning motivation, social presence, and cognitive presence in a blended learning environment. The research methodology used is interesting and innovative. Data samples were obtained from 98 engineering students in a blended learning course and analysed using Spearman's correlation test, regression, ANOVA, and *t*-test. Research results suggested that TRIZ and industry talks strongly, positively, and significantly correlated with learning motivation, social presence, and cognitive presence. A well-rounded learning experience compounded of TRIZ and industry talks significantly affected learning motivation, social presence, and cognitive presence, thereby enhancing students' programme outcome (PO) achievement. These findings can be attributed to the students' independent learning capabilities with TRIZ and industry talks. Analogically, embracing TRIZ and industry talks helps turn blended learning into a "sweet instead of bitter pill to swallow" for engineering students in the face of the COVID-19 pandemic.

James, Nisa et al. 'Integrated Fuzzy AHP and TOPSIS as Innovative Student Selection Methodology at Institutions of Higher Learning'. 1 Jan. 2022:1–13.

This paper presents an innovative methodology for student selection for admission into an Institute of Higher Learning (IHL) using Fuzzy Analytical Hierarchy Process (FAHP) and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS). Drawing on the success of using these methods in other fields, this study applies the technique and principles on student selection process. Fuzzy Analytical Hierarchy Process (FAHP) is used in determining the weights of the criteria by the decision makers which

avoids the vagueness and inconsistencies in decision making process and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method ranks finds out the best alternative solution for student selection by calculating the relative closeness from the positive ideal solution. This research finds using the hybrid method is effective in student selection for IHL and makes the process efficient and bias-free. This method can be applied to various fields and uses where multi-criteria decision making is involved.

Topic 2: Digital transformation of higher education staff and teaching process

de Juana Espinosa, Susana Amalia et al. 'An Analysis of Best Practices to Enhance Higher Education Teaching Staff Digital and Multimedia Skills'. 1 Jan. 2022:1 – 15.

The goal of this explanatory research is to present and make a comparison of key training programs, deemed best practices, that address different ways to assist higher education teaching staff to acquire the multimedia competencies required to be technologically- proficient in their classes. Desk research provides the data for a multiple case study of courses implemented in universities of five European countries, namely Spain, Lithuania, North Macedonia, Romania, and Slovenia. The results of the study show a total of 28 courses ranging from how to deliver online teaching to gamification, going through other topics such as photo and video editing, that enable higher education teachers to acquire digital skills. The main challenges detected for the success of these training programs are the teachers' lack of time for training, non-positive attitudes towards technology, and lack of innovative capacity in their teaching processes. Among the positive outcomes, we can find that these universities opt for programs with courses varied in content, to cover a wider range of skills, as well as offering courses at several levels of development so that all staff may improve, from the very beginners to more advanced tools. By identifying the challenges and success factors behind the best practices hereby analysed the lessons obtained from this research may serve as benchmarks for other universities to develop efficient multimedia training programs for university staff.

Qorraaj, Gazmend and Kaçaniku, Fjolla. 'Exploring Digital Transformation of Teacher Education in the Western Balkans: Case of Kosovo'. 1 Jan. 2022:1–9.

The main objective of the presented study is to examine and explore how digital transformation in higher education in Kosovo is conceptualised in a changing context. The research focuses on teacher

The aim of this paper is to apply the principles of the complex system to the analysis of the human factors of the Human Performance Envelope (HPE) concept. Moreover, this paper's objective is to create a mathematical model that will give the opportunity to study all the physiological ergonomic factors, not only the ones that are most studied. The most studied factors are mental workload, stress, and situation awareness (SA). By applying the mathematical model, it is possible to analyse all the physiological factors (stress, mental workload, fatigue, attention, vigilance etc.). Firstly, a literature analysis was performed on the complex systems application by the present researchers concerning pilots' HPE. The proportional and inverse proportional relationships between the nine human factors were visually illustrated. The research methodology was designed based on the theory of complex systems (hybrid modelling) which was applied to the HPE concept. A mathematical model was created, then it was validated and solved based on previous studies.

Further research is required to validate the whole mathematical model, including physiological measurements (experiments) for the six ergonomic factors and the applied heuristic psychosocial methods for the others.

Khan, Muhammad Anwar et al. 'The Role of Post-implementation Strategies for Projects of Enterprise Information Systems in Enhancing Management System: A Case Study Approach'. 1 Jan. 2022:1–10.

The presented research aims to review the post-implementation strategical aspects of integrated information systems projects of academic organizations. For this purpose, an exploratory case study is conducted in one of the leading universities in Pakistan. This institution implemented enterprise information systems recently in 2021. The interviews of the officers involved in the process of implementation and management of such systems were conducted and transcribed. The findings of this research will help the top management to proactively develop effective strategies for the successful implementation and maintenance of enterprise information system projects in the organization.

3. Conclusions and acknowledgements

A general overview of the most debated topics in the articles have been created using the words

cloud generated (based on their brief description) and it is presented in Fig. 1. It is very suggestive in terms of analysing how the collection of articles addressed the primary description of the special issue and how the primary objectives have been achieved. From the suggestive cloud there can be seen that the authors' common focus was on "learning, education research" and "organizational studies" related to different actors or contexts "universities, student, teacher, social" and supported by "model", "mathematics". Overall, we appreciate that the articles collection is relevant for the topics defined by the description of the thematic special issue.

In the end, we would like to acknowledge to all anonymous reviewers for their effort on providing quick, fair, and professional reviews of manuscript proposals. Last, but not least we are honoured that we have the chance to work productively with Prof. Nada Trunk Sirca (the Editor-in-Chief of the journal) and with Gabriela Ricci (Publication Manager for IOS Press). Thank you both for supporting us during these two years of collaborations.

Finally, I wish all the readers to enjoy the articles presented in the special issue and be inspired by the knowledge sharing and dissemination initiative of the authors! Enjoy the digital transformation and accelerate your ideas in a more productive manner!

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