11th Higher Education Institutions Conference

21 – 22 September, 2023
FUTURE OF LEARNING, TEACHING AND INNOVATION
– ARTIFICIAL INTELLIGENCE AND HIGHER EDUCATION

PROCEEDINGS

Double-Blind Peer Reviewed
Edited by: Karmela Aleksić-Maslać

ZSEM Zagreb School of Economics and Management
LSB Luxembourg School of Business

11th Higher Education Institutions Conference

21 – 22 September, 2023

FUTURE OF LEARNING, TEACHING AND INNOVATION – ARTIFICIAL INTELLIGENCE AND HIGHER EDUCATION

PROCEEDINGS

Double Blind Peer Reviewed

Publisher	MATE Ltd., Zagreb
For Publisher	Vesna Njavro
Chief Editor	PhD Mato Njavro
Editor	M.Sc. Karmela Aleksić-Maslać

Contents

Welcome Note

Dear guests and friends,

On behalf of Zagreb School of Economics and Management, Croatia's first AACSB accredited business school which is among the top 5% best business schools in the world since, I'm proud to wish you all a warm welcome to our eleventh consecutive Higher Education Institutions Conference – HEIC 2023. This conference has been a beacon of inspiration for the academic community over the past eleven years, symbolizing excellence, educational trends, and growth. Our theme for this year, "Future of Learning, Teaching and Innovation – Artificial Intelligence and Higher Education," aims to delve into the transformative landscape shaped by emerging technologies and disruptive innovations. Building on the success of HEIC2022, which set new standards for discourse within the educational industry, we aspire to continue fostering discussions on the latest trends. In the relentless pursuit of the future, HEIC2023 focuses on the rapid evolution of technologies and innovations that are not only reshaping the education sector but also the world at an unprecedented pace. As a pioneering force among Croatian higher education institutions, the Zagreb School of Economics and Management has been shaping future leaders for over two decades, navigating through challenges with resilience. It is imperative to equip students for the imminent changes ushered in by the latest technological advancements, particularly the dynamic landscape of artificial intelligence. Recognizing that the current developments in artificial intelligence are advancing at an astonishing rate, we acknowledge the necessity of integrating them into the realm of education. Despite the challenges, we believe that embracing these innovations is crucial for enhancing higher education standards. We, as members of the academic society, bear the responsibility of spearheading the development of artificial intelligence in our respective countries. Our collective task is to collaborate, engage in meaningful discussions, learn from one another, and contribute to the improvement of higher education by seamlessly integrating artificial intelligence. Through sharing our experiences and knowledge, our goal is to showcase how higher education can harness the benefits of AI implementation, pioneering intelligent trends that will guide the next generations towards a brighter future.

Best regards,
Mato Njavro, PhD
Dean, Zagreb School of Economics and Management

Organizing Committee

dr. sc. Đuro Njavro
Conference chair, President of the Board of Trustees, Zagreb School of Economics and Management

mr. sc. Karmela Aleksić-Maslać
Associate Dean, Zagreb School of Economics and Management

dr. sc. Zoran Barac
Managing Director, Zagreb School of Economics and Management

dr. sc. Dino Dogan
Dean, Luxembourg School of Business

dr. sc. Maja Martinović
Associate Dean, Zagreb School of Economics and Management

dr. sc. Mirna Koričan Lajtman
Academic Director, ZSEM Business Academy

dr. sc. Goran Oblaković
Associate Dean, Zagreb School of Economics and Management

Sara Oreški, M. Econ.
Conferences and Event Project Manager, ZSEM Business Academy

Program Committee

dr. sc. Abdelkrim Haqiq
Hassan 1st University, Settat, Morocco

dr. sc. Boris Podobnik
Boston University and Zagreb School of Economics and Management

dr. sc. Danica Kragic
Royal Institute of Technology (KTH), Stockholm, Sweden

dr. sc. Dino Dogan
Luxembourg School of Business

dr. sc. Đuro Njavro
Zagreb School of Economics and Management

dr. sc. Emmanuel Glakpe
Howard University, Washington DC, USA

dr. James Uhomoibhi
Ulster University, Northern Ireland, United Kingdom

dr. sc. Julie Felker
University of Michigan-Dearborn, USA

mr. sc. Karmela Aleksić Maslać
Zagreb School of Economics and Management

dr. sc. Kjell Knudsen
Labovitz School of Business and Economics, USA

dr. sc. Maja Martinović
Zagreb School of Economics and Management

dr. sc. Mato Njavro
Zagreb School of Economics and Management

dr. sc. Metka Tekavčić
University of Ljubljana, Slovenia

dr. Michael Hanke
University of Liechtenstein, Liechtenstein

dr. sc. Richard Tresidder
Sheffield Hallam University, UK

dr. sc. Shab Hundal
Jyväskylä University of Applied Sciences, Finland

dr. sc. Siniša Krajnović
McKinsey & Company

dr. sc. Victoria I. Pyatanova
Plekhanov University, Russia

Keynote speakers

Boris Debić, mag. phys.

Boris Debić, mag. phys. Google's Chief History Officer emeritus, is a technologist who spent 15 years with the company from its earliest days and in the period of the most accelerated growth ($3B to $161B revenue/yr, 3500 to 210k workforce). At Google he has worked in several roles: Release engineering, G+Privacy, Global Infrastructure, Data center site location, AI driven decision making, Ads serving and machine learning infrastructure, Developer Relations. He has worked with Google.org on analysis and exchange of global climate modeling data sets and agricultural data to provide food security forecasts, also in providing access to education to Syrian refugees in Jordan and across the Arab world. With support from NASA Ames directs Mars Society's NorCal Rover project. He is a board member of several high tech startup companies in both the US and Croatia including http://production.pro and which was featured as a top three at Launch Fest in San Francisco. Prior to Google he held positions in: Silicon Valley startups, most notably E.piphany; the United Nations; the Croatian Ministry of Foreign Affairs and the University of Zagreb.

Dr. Laura Borge Del Rey

Dr. Laura Borge Del Rey is the Programme Manager on EIT Food's Education team for EIT's HEI (Higher Education Institutions) Initiative, launched by the European Insititue of Technology and Innovation in 2021 as part of the European Commission's Horizon Europe programme, with the objective of helping universities boost their innovation and entrepreneurial capacity. Laura has over 8 years of experience in Horizon Europe proposal writing and project implementation on topics such as technology transfer from academia to industry, technology commercialization, or academia-industry collaboration. Laura holds university degrees in technology and innovation management (PhD), Agricultural bioengineering (MSc), Food and Resource Economics (MSc), and Environmental Sciences (BS).

Panelists 2023

1. The impact of AI on the education

Moderator:	Boris Debić, MSc

Panelist:	Janko Mršić-Flögel, PhD

Dr. Sc. Janko Mršić-Flögel is a pioneer of the mobile data industry, behind some of the first ventures in Mobile Internet – from SMS, WAP, mobile app stores to personal cloud telecom solutions. He has created and sold a couple of mobile tech startups. Currently he is CEO of Planet Computers. Planet Computers manufactures smartphones and is planning to introduce a range of AI network appliances this year to support democratised blockchain-enabled AI service infrastructure. Janko holds a PhD in Neural Networks from Imperial College, London. He was awarded the Governor's Lectureship at the Department of Computing, Imperial College, where he lectured on Neural Networks (A.I.), Multi-media Systems and Operating Systems.

Panelist:	Dorian Wild, mag. phys. – geophys

Dorian Wild, mag. phys. – geophys. holds a bachelor's degree in Economics from Zagreb School of Economics and Management and a master's degree in Physics and Geophysics from the University of Zagreb, Faculty of Science. During college years, he worked in the application of AI in physics and education, in addition to publishing scientific papers in the field of business. Currently working at ZSEM, he holds lectures in math/economics/AI related subjects, and is a key member of ZSEM AI:X:Lab alongside his mentor, Boris Debić. One of his current main projects is the translation of the book "Artificial Intelligence: A Modern Approach" to Croatian. Additionally, Dorian plays a vital role in advancing AI education in Croatia by holding conferences for school teachers on its practical applications in the classroom.

2. EIT – Mapping the entrepreneurial progress in HEI

Moderator: **Dubravka Kovačević, PhD**

Dubravka Kovačević, PhD, joined the International Cooperation Office of ZŠEM. She received her doctorate in the field of the world economy – international business with a special focus on the European Union at the University of Economics in Bratislava.

She has significant teaching experience and experience in business administration in international relations. She worked for some time in the banking industry. She knows the topics and institutions related to the European Union very well. Dubravka speaks English and Slovak fluently and is fluent in Czech, German, and Italian.

Panelist: **Lyubomyr Matsekh, PhD**

Dr. Lyubomyr Matsekh is the Head of Consulting Practices at ELEKS. In this role, he and his team develop a strategy for creating technology leverage for companies worldwide. After living and working for several years in Asia, he is back in Europe, where besides working for ELEKS, Lyubomyr teaches leadership, sustainability and social entrepreneurship at several universities in Baden-Württemberg (Germany). He also supports the Centre for Entrepreneurship (Reutlingen/ Germany) in innovation management, teaches entrepreneurship and expands the network of international partners.

Panelist:	Manal Al-Hammadi, MSc

Manal Al-Hammadi, MSc is a highly accomplished professional with a diverse educational background and extensive experience. She holds a Bachelor's degree in English Literature, a Diploma in Women in Leadership, and a Master's Degree in International Relations specializing in International Security and Negotiations. Throughout her career, Manal excelled as a Business Development Expert, displaying strong skills in market analysis and partnership negotiation for both new and existing collaborations. From 2018 to 2022, she served as the Head of Technology Deployment at the University of Warsaw TTO, where she assessed market potential for patents and inventions, contributing significantly to technology transfer efforts. Currently, as a Research Fellow at the University of Warsaw, Manal Al-Hammadi continues to excel in her commitment to research and academic pursuits, demonstrating her passion for contributing to knowledge and innovation. Her diverse skill set, educational achievements, and professional experience make her a valuable asset in any role she undertakes.

3. Life – long learning with AI

Moderator: **Ivan David Dogan, mag. phil**

Ivan David Dogan, mag. phil., is a lecturing assistant at the ATLANTIC Department of Management, Entrepreneurship and Digital Transformation and serves as the Academic Secretary for the EMBA/MBA Management program at ZSEM. He holds a degree in philosophy and is currently completing his MBA in Supply Chain Management. He teaches courses in Philosophy, Critical Thinking, Business Ethics, and Management. Additionally, he conducts seminars and webinars for the business community.

Panelist: **Dino Ivan Dogan, PhD**

Dr. Dino Ivan Dogan, born in Stuttgart in 1963, is a prominent figure with a background in economics and computer science. After obtaining his doctorate in "Strategic Logistics Management" in 1993, he embarked on a distinguished industrial career at Alcatel, holding various managerial roles for a decade. His career includes significant positions at Vipnet, Mobilkom Austria, and Telekom Austria, where he played a pivotal role in the merger resulting in A1 Telekom Austria. Dr. Dogan has excelled in leadership roles, earning recognition such as the European Change Communication Award. Currently, he serves as the dean of the Luxembourg Business School, is the founder of Dogan Consulting doo, and actively contributes to academia, holding positions at the Zagreb School of Economics and Management. Beyond his professional achievements, he has played a key role in founding educational institutions like the German International School in Zagreb and the Zagreb Foundation Knowledge in Action. Dr. Dogan's influence extends to various advisory roles, including the German-Croatian Chamber of Industry and Crafts, and he continues to contribute significantly to both the business and academic realms.

Panelist: **Sanja Sever Mališ, PhD**

Sanja Sever Mališ, PhD is a full-time professor at the Department of Accounting at the Faculty of Economics, University of Zagreb. After serving as Vice Dean, since 2022, she has been the Dean of the Faculty of Economics at the University of Zagreb. She actively participates in teaching courses related to accounting, financial statement analysis, and external auditing. She is a co-author of university textbooks and books on Accounting 1 -Accounting for Non-Accountants, Financial Statement Analysis -Principles, Procedures, Cases, and State Audit. Sanja holds the title of Certified Internal Auditor after completing her education organized by the Internal Audit Section of HZRFD. She has actively participated in several research projects and has independently and collaboratively published numerous professional and scientific papers. She is a member of the editorial board of the professional journals "Accounting and Finance" and "Treasury," as well as the compendium "Internal Audit and Control" and the scientific journal "Journal of the Faculty of Economics in Zagreb."

Panelist: **Sunčica Oberman Peterka, PhD**

Sunčica Oberman Peterka, PhD is a full-time professor at the University of Osijek's Faculty of Economics, where she teaches entrepreneurial and strategic courses. In two mandates she held the position of vice dean for teaching, and from 2021 she is vice dean for cooperation with Business, International Cooperation and Projects. She is also the director of the international interdisciplinary and inter-university doctoral programme Entrepreneurship and Innovation. She has been a member of the GEM research team for Croatia (since 2002), CEPOR research team and European Council for Small Businesses and Entrepreneurship and is an external associate of the Centre for Entrepreneurship Osijek. She is a member of the expert team at the European Commission for HEInnovate – a tool for measuring the entrepreneurial and innovative potential of universities. She has been involved in a number of accreditation and reaccreditation processes as well as external audits at AZVO. Research interests: entrepreneurial education, entrepreneurial university, quality of higher education, strategic management, authentic leadership.

Panelist: **Tanja Dmitrović, PhD**

Prof Dr Tanja Dmitrović is a full professor of marketing at the School of Economics and Business at the University of Ljubljana (SEB LU). From 2017 to 2021, she was Vice Rector of the University of Ljubljana for Knowledge Transfer and is Chair of the Supervisory Board of the Ljubljana University Incubator (since 2020). Over the years, she has held numerous positions at SEB LU, including Head of the Academic Unit for Marketing, and Head of the Quality Assurance Committee. She is currently a member of the SEB LU Senate and Chair of the Human Resources and Habilitation Committee. From 2016 to 2019, she was the national coordinator for Slovenia at the European Marketing Academy. Her research work covers various areas of marketing and she collaborates with companies in the development of new products, marketing strategies and market analyses.

New Teaching and Assessment Methods in HE

SESSION CHAIR:

Karmela Aleksić-Maslać

Humans Required: Artificial Intelligence and Educators Joining Forces

Roger W. Reinsch[1] and Steve Sharkey[2]

University of Minnesota Duluth, Duluth MN, United States
[1]rreinsch@d.umn.edu, [2]ssharkey@d.umn.edu

Abstract

Higher education is faced yet again with a transformational challenge in delivering its mission to students and society. This new challenge is the expansion of advanced artificial intelligence (AI). Universities have faced major technological transformations in the past. Advanced AI and its most recent incarnations—ChatGPT and other Large Language Models (LLMs)—is the latest presumptive threat to higher education and it will be one of the most powerful agents of change in higher education. Leveraged appropriately, AI could be a critical partner in strengthening the long-term success of higher education.

We explain that the focus should be on how to effectively integrate AI to improve the learning experience. AI will lead to a reevaluation of pedagogical approaches and can be a positive development. With ChatGPT and the development of other AI tools, educators will instead have to adapt and innovate to meet this new challenge. Higher education institutions should view these new models as an opportunity to rejuvenate the classroom learning experience.

Our focus is on several aspects of AI. One part is how it can change the students experience. The other portion is that it can also change how faculty approach the educational experience, in regard to changing the way they teach and that it can also save faculty time. Finally, we address the issues that administrators face in incorporating AI into the educational environment on the campus. The challenges involve both money, addressing faculty fears and addressing educating faculty about the use of AI and its benefits.

Keywords: *Artificial Intelligence, Advanced AI, Higher Education, ChatGPT, LLM.*

ISSN 2991-9371

1. Introduction

Higher education is faced yet again with a transformational challenge in delivering its mission to students and society. This time it is the expansion of advanced artificial intelligence (AI). Universities have faced major technological transformations in the past—from a focus on classical education to that of incorporating scientific research, which occurred around the time of the industrial revolution. Later there were several waves of accepting and incorporating technology into education that included the use of calculators, the internet, and Wikipedia. There were warnings of the existential dangers these transformational changes would pose to higher education each time. Advanced AI and its most recent incarnations—ChatGPT and other Large Language Models (LLMs)—is the latest presumptive threat to higher education. While higher education is facing this threat to its existence, we who are involved in higher education are also faced with additional challenges of demographic and economic changes impacting program and class sizes as well as the overall number of students engaged in higher education. Along with these issues is the demand from students for more personalized attention. Leveraged appropriately, AI could be a critical partner in addressing these challenges and strengthening the long-term success of higher education.

While some educators advocate for the elimination of AI from the educational process, this is not a feasible solution since AI is here to stay and will be used by businesses and others. Therefore, the focus should be on how to effectively integrate AI to improve the learning experience. Of concern is that students may use AI to cheat, which is a reality that cannot be eliminated entirely. However, effectively learning to use AI to benefit the student learning experience can also mitigate cheating. It is essential to recognize that cheating existed before AI, and minimizing it is the best course of action [1]. "Critics have decried the technology, arguing that it will make it possible for students to easily cheat, with little hope of detection, and will therefore undermine higher education. While it's true that generative AI will likely lead to a reevaluation of teaching and assessment in higher education, changing pedagogical approaches can be a positive development. With ChatGPT and the development of other AI tools, educators will instead have to adapt and innovate to meet this new challenge. Rather than give into the panic about AI, higher education institutions should view these new models as an opportunity to rejuvenate the classroom learning experience" [2]. Thus, this article aims to explore how to use AI to augment learning and improve the educational process, highlighting the critical impact that humans will play in the use of AI. This means that humans remain critical to the use of AI. In addition, this article aims to provide practical information for educators using AI to augment education.

"Artificial intelligence is emerging as one of the most powerful agents of change in higher education, presenting the sector with unprecedented academic, ethical and legal challenges. Through its algorithmic ability to adapt, self-correct and learn, AI is pushing the boundaries of human intelligence, making the future of higher education inextricably intertwined with AI" [3]. AI will radically alter how work gets done, however, its impact will be in complementing and augmenting human capabilities, not replacing them—hence, our title is "Humans Required." We can see a significant improvement in performance when humans and artificial intelligence work together. "AI actively enhances … complementary strengths [between humans and itself]: the leadership, teamwork, creativity, and social skills of the former and the speed, scalability, and quantitative capabilities of the latter. For AI to evolve and improve, it will need to continuous input of more data and recent information. Only humans can do

that. AI can make quick decisions based on complex algorithms, but it cannot make ethical decisions, only humans can provide that aspect of the decision-making process. In addition, AI makes decisions based on the data that is available. "There may be several other reasons as to why humans are required, but it is clear that without humans, AI could not exist and continue to exist" [4].

"While AI will radically alter how work gets done and who does it, the technology's larger impact will be in complementing and augmenting human capabilities, not replacing them. [Education] benefits from optimizing collaboration between humans and artificial intelligence. To take full advantage of this collaboration, [Universities] must understand how humans can most effectively augment machines, how machines can enhance what humans do best, and how to redesign [educational] processes to support the partnership" [5]. Education requires all of those skills and will benefit from the use of AI.

2. A New Age for Education

Artificial intelligence is transforming education, but as seen above, there's no reason to fear that artificial intelligence will replace faculty. However, as Ben Nelson stated, there is a caveat here. While AI may not replace faculty, some faculty may be replaced by faculty who know and use AI [6]. Therefore, faculty need to become familiar with AI and learn how to use it in the classroom. The benefits of this, if used constructively, can make faculty more productive, enhance student learning, and prepare students for what will be expected of them in their careers. The purpose of AI should be to improve faculty decision-making for educational purposes.

To take full advantage of AI, specifically, ChatGPT, faculty must understand how we can most effectively augment ChatGPT, how ChatGPT can enhance what we do best, and how to redesign educational processes to support a new and evolving partnership. Creating a partnership with this technology means that we, as faculty, can re-imagine education. This means that we must collaborate with AI.

Collaboration between professors and AI can bring significant benefits to educating students. Here are some examples of the value of this collaboration:

AI can help professors personalize the learning experience for students by identifying the student's knowledge gaps and providing tailored feedback. For instance, AI can analyze a student's performance on quizzes and tests to identify areas where they need more support, and then it can provide targeted resources to help the student improve. One of the significant benefits of AI is its ability to analyze large data sets and provide personalized recommendations. By collaborating with AI, professors can develop customized learning paths that cater to each student's unique needs and learning style. This can result in improved student engagement, higher retention rates, and better learning outcomes.

Professors can collaborate with AI to develop new technologies that can improve the way we teach and learn. For instance, advanced AI can provide 24/7 support as a partner to students as they struggle with projects outside of class [7]. A study by Bouschery explores how GPT-3 can become a member of a hybrid innovation team by acting as an innovator in the new product development process. They found that it allowed for larger problem and solution spaces and ultimately led to higher innovation performance. Further studies have shown that the generative

nature of ChatGPT enables it to contribute new ideas and concepts, for example, by completing sentences, paragraphs, or whole texts based on a given context and problem definition. Whereas it may still deliver less original and valuable ideas than humans, ChatGPT can help human team members better understand their problem and solution space." This is an excellent example of how AI can be used by faculty to augment and improve human learning and performance.

Another example that can be used is to provide feedback to students on assignments. This can be done by prompting ChatGPT with "provide feedback for this student's answer", then copy and paste the answer into ChatGPT. It will generate a very comprehensive response that can be used by the professor. This will save time. One of the authors used this, and it did a very good job of providing detailed feedback. There are many other time-saving aspects that may be used. For example, ChatGPT will create PowerPoint presentations for you [8].

Professors can also leverage AI technology in their teaching by incorporating AI-powered tools such as chatbots, virtual assistants, and machine learning algorithms to provide personalized support and feedback to students. For example, a chatbot could help students work through practice problems and provide feedback on their responses, or a virtual assistant could help students navigate course materials and assignments.

Ultimately, while professors may not be able to create an AI-powered adaptive learning system on their own, they can work with educational technology companies and leverage AI tools and resources to provide more personalized learning experiences to their students. For example, Duke University is working on an Intelligent Classroom Assistant, but it is not publicly available currently. "The research effort led to the development of a tool called the 'Intelligent Classroom Assistant." The tool reads in and analyzes data from electronically submitted quizzes, homework and assessments and builds a map of how well each student has mastered each of the class topics covered to date. To do so it utilizes a novel natural language processing and machine learning model developed as the backbone of the tool. Although still under development at the time, the Intelligent Classroom Assistant was utilized by Professors Reifschneider and Daniel Egger in the AIPI 510 course they taught in Fall 2020" [9]. The ultimate goal is toward a learner-centered, data-driven, and personalized learning experience [10].

AI can improve access to education for a broader audience because ChatGPT can translate material into a student's native language. This will help both for face2face classes and online classes. It will help students understand the material better when they can read it in their native language. This means that a student could put the online syllabus and other materials into ChatGPT and get it translated into their native language.

"Another advantage of using AI for personalized learning is that it will act as a coach for (both faculty and students). Learners frequently have questions about ambiguous topics and need responses that are relevant to them at the appropriate time. Learners can now ask bothersome questions at any time and in any location thanks to AI" [11]. This will supplement the professor's teaching and may save the professor some time in answering individual students' questions.

By collaborating with AI, professors can explore new ways of thinking and approaching teaching. For example, one of the authors of this article teaches a legal environment course where a project involved negotiating a complex international sales contract. Involved were the contract itself, a letter of credit, a complete arbitration agreement, and several other documents, such as a bill of lading, and marine insurance. Since the students in the class had little experience in finding templates for all these documents, the faculty member in

the past provided these templates. Therefore, the project involved only the negotiation of terms and conditions to fill in the blanks, etc. However, AI made it possible to change this. The assignment now has evolved to having the students use ChatGPT to find templates for all those documents. The students now must figure out the correct prompts, find the appropriate templates, and submit what they found prior to using them so that the faculty member can make sure the templates are good and complete, and useful for completing the project. This has added an additional educational experience to the class of finding information for this project. It better represents what these students will have to be able to do in their future jobs by teaching them that figuring out the proper prompt will be necessary to get useful and reliable information.

AI can help professors automate repetitive and time-consuming tasks, such as grading and administrative duties. This can free up professors' time, allowing them to focus on more important tasks, such as developing new courses, conducting research, and mentoring students.

Here are a few examples:

- Automated grading: AI can be trained to grade multiple-choice or fill-in-the-blank questions quickly and accurately. This approach can save professors a lot of time and allow them to focus on more complex tasks, such as evaluating essays or projects.
- Natural language processing: AI can be trained to analyze and evaluate essays and other written assignments using natural language processing (NLP) techniques. These systems can identify patterns and provide feedback on factors such as sentence structure, grammar, and clarity.
- Rubric-based grading: Professors can develop rubrics that outline the criteria for grading assignments, and AI can be trained to evaluate assignments based on these rubrics. This approach can provide more consistent grading across multiple graders and reduce the potential for bias.
- Peer grading: AI can be used to facilitate peer grading, where students grade each other's work under the supervision of a professor. AI can help ensure that the grading is fair and consistent by comparing the grades assigned by multiple students.

The above is not an exhaustive list, the intent is to provide some examples of the benefits of collaborating with AI.

3. Administration's Role

Even though AI can provide various ways to customize teaching to each student's needs, professors are not able to do this on their own. Very few of us would have the expertise to create an individualized learning environment for our students. Ultimately, while professors may not be able to create an AI-powered adaptive learning system on their own, they can work with educational technology companies and leverage AI tools and resources to provide more personalized learning experiences to their students. Therefore, the university must provide new resources that faculty may use to do this. Until that happens, individualized learning will most likely not happen. There will be a need for resources and the burden on the administration to make those resources available.

Since AI is here to stay, and it can be a very useful tool for faculty, the problem is that faculty must have training and support to be able to use AI. That puts the burden on the administration to provide such training and to provide continuing support for faculty, both existing and new faculty members. That means that "that the future of AI in higher education requires a strategic and holistic approach that integrates education, planning and research" [3].

The first step is for institutions to have campus-wide transparent discussions about the benefits and detriments of AI. Such discussion should include conversations around AI's responsible use, and its impact on assignment design strategies, and ethical issues.

Part of the job of educational institutions is to prepare students for the future. This means a recognition by not just faculty, but also administration that AI is here to stay and must be used by faculty. Integrating the use of AI into the classroom means that students will learn skills that they need in the future. For educational institutions to ignore that means that administrators are not helping faculty to properly prepare students for their future.

The administration needs to understand that there will be resistance across campus. Being unfamiliar with AI creates fear among some faculty, and that creates resistance to change and adapt. Therefore, administrators must be prepared to provide help with using AI and demonstrate that it can be very useful regarding pedagogy and giving time for faculty to do other things such as research. The fact is that once faculty learned how to use it and that it can save time and enhance the educational experience faculty will feel comfortable and willing to change.

Therefore, the university must offer training and workshops to familiarize faculty with AI concepts, tools, and applications. Such sessions must cover both theoretical knowledge and practical skills, enabling faculty members to understand the potential of AI, thereby enabling them to implement AI into their respective disciplines. In addition, universities must provide resources and infrastructure such as high-performance computing systems and AI software. To fund some of this, universities need to explore funding mechanisms such as grants specifically targeted toward AI-related projects. Financial support is a motivating factor for faculty members to explore AI applications in their research, curriculum development, and teaching methods.

It is imperative that universities take the lead in identifying and understanding the complexities and challenges that AI will bring to the academic landscape. Moreover, universities should collaborate with industry and the public sector to create integrated, transparent, and impartial AI programs while equipping students with lifelong learning skills to make our soon-to-be AI-driven society both better and more just" [3].

All of this will take time, money, and commitment from everyone on campus. Time and money are already very limited for most people on campus, but without doing this and moving into the future, universities will be left behind and no longer be relevant.

3.1. Discussion

As a faculty member, you could allow students to use ChatGPT in a variety of ways, or not at all. Understand that saying "not at all" will not prevent students from using it. Therefore, faculty members are encouraged to incorporate AI into their teaching deliberately. This may

help students develop skills related to working with such tools, which will help to prepare them for their future jobs. Incorporating AI intentionally will help students learn about their fields and/or a specific topic from more than one source—the faculty member's lecture, text, and other materials provided that cover the subject matter. By using AI, students can explore the topic from different sources and viewpoints. If that is what a faculty member wants to do, then they can design assignments that ask students to engage with AI tools and AI-generated materials. The faculty member could ask students to analyze work that they or the students themselves generate from ChatGPT or similar tools.

A real benefit of using AI and asking students to use it is that the students will have to experiment with different prompts, follow-up prompts, guidance, and directions that result in different outputs from ChatGPT. Seeing different results derived from different prompts, follow-up prompts, and other processes will show students how to attain the most useful information. AI, as a research tool, requires good input to get good output. Having students learn this process will be valuable in their education journey and in their future work.

If a faculty member is open to students using AI, there should be some information about it in the syllabus and discussion in the classroom. One approach could be that each student writes out how they intend to use ChatGPT and other AI tools. This will get them to think about the usage of AI and encourage them to explore the possibilities. Faculty members could also have students talk about their prior use of AI. That way the faculty member will have some idea of students' capabilities. The syllabus should be clear about how students may use ChatGPT, including citing its use. In addition, the syllabus should be clear that students will be responsible for any inaccuracies in the content itself and in any citations generated by ChatGPT. This means that if there are any inaccuracies, students' grades for that assignment will be impacted. This will force students to doublecheck what ChatGPT provides.

Advanced AI is also challenging educators to ensure we are evaluating students' performance or competence. In the past, instructors may have leaned more on measuring performance for simplicity (i.e., multiple choice questions) as a shortcut for gauging competence. ChatGPT is demonstrating mastery at performing as if it is competent while not actually demonstrating competence. Since the optimal result is a balance between competence and performance. Competence provides the foundation for performance while performance showcases the effective utilization of competence to achieve desired outcomes. This will definitely require higher education to elevate our methods of evaluating student competence if they leaned too heavily on simple performance.

The above is a brief discussion to encourage faculty members to use ChatGPT. However, also addressed is the fact that administrators must provide resources for faculty. With today's shrinking enrollment and budget cuts, that may be difficult to do. What administrators need to consider is that having ChatGPT and other AI tools as part of the educational process might mean that students will seek out those universities that have this resource and faculty trained in using it. The resources must be designed to help faculty and students with the technology and the skills to use this new technology. The fact is that AI will continue to develop and grow. As noted, there will be AI teaching assistants that can provide individual teaching help to students. This would greatly increase learning and retention of students. The cost of such individual help would be much cheaper than actual humans doing this on an individual basis with each student. That would be virtually impossible to do, but AI could do that.

Therefore, administration must understand this and start the process to incorporate AI resources into the institution. If ChatGPT is allowed to be used, it must be clear in the syllabus that students should read the Privacy Policy and Terms of Use, since ChatGPT collects information on users.

4. Conclusion

While ChatGPT can be a valuable tool for learning, it's still advisable to combine it with other educational resources, such as textbooks, lectures, practical exercises, and interactions with teachers and peers. A comprehensive educational experience that includes structured learning, practical application, and critical thinking opportunities is typically best achieved through a combination of self-study and formal education." "It's important to recognize that ChatGPT should not replace core aspects of university education, such as attending lectures, participating in discussions, collaborating with peers, and completing assignments and assessments as required by the curriculum. Instead, ChatGPT can serve as a helpful tool alongside these traditional learning methods.

What administrators need to understand is that having ChatGPT and other AI tools as part of the educational process might mean that students will seek out those universities that have this resource and faculty trained in using it. The resources must be designed to help faculty and students with the technology and the skills to use this new technology. The fact is that AI will continue to develop and grow. As noted, there will be AI teaching assistants that can provide individual teaching help to students. This would greatly increase learning and retention of students. The cost of such individual help would be much cheaper than actual humans doing this on an individual basis with each student. That would be virtually impossible to do, but AI could do that.

Therefore, the administration must understand this and start the process to incorporate AI resources into the institution. This may mean an investment up front to train everyone, but the long-term results could be that this investment will pay back by gaining increased enrollment and retention of students. It will impact the educational mission of the university. These are the skills that higher education has been focused on developing in students from the very beginning. Used appropriately, ChatGPT is going to help faculty concentrate on these elements that truly make a difference in our students and in the world.

References

[1] A. Abramson, "How to use ChatGPT as a learning tool ", Monitor on Psychology, Volume 54 No. 3, 2023.

[2] G. Diebold, "Higher Education Will Have to Adapt to Generative AI—And That's a Good Thing", Center For Data Innovation, 2023, https://datainnovation.org/2023/01/higher-education-will-have-to-adapt-to-generative-ai-and-thats-a-good-thing.

[3] M. Abdous, "How AI Is Shaping the Future of Higher Ed", Inside Higher Education, March 21, 2023, https://www.insidehighered.com/views/2023/03/22/how-ai-shaping-future-higher-ed-opinion#:~:text=In%20addition%2C%20AI%20tools%20are,motivation%20and%20predict%20student%20performance.

[4] D. De Cremer and G. Kasparov, "AI Should Augment Human Intelligence, Not Replace It", Harvard Business Review, March 18, 2021, https://hbr.org/2021/03/ai-should-augment-human-intelligence-not-replace-it.

[5] H. J. Wilson and P. R. Daugherty, "Collaborative Intelligence: Humans and AI Are Joining Forces Humans", Harvard Business Review, July-August 2018, https://hbr.org/2018/07/collaborative-intelligence-humans-and-ai-are-joining-forces.

[6] B. Nelson, founder of Noodle, This is a paraphrase of a quote from this video, https://www.youtube.com/watch?v=A7CegoggVbk.

[7] Y. K. Dwivedi, et al., "So What if ChatGPT Wrote It?" Multidisciplinary Perspectives on Opportunities, Challenges and Implications of Generative Conversational AI for Research, Practice and Policy", International Journal of Information Management, 2023, https://www.sciencedirect.com/science/article/pii/S0268401223000233.

[8] K. Gedeon, "ChatGPT Will Create an Entire PowerPoint Presentation For You — Here's How", Laptop Magazine, March 17, 2023, https://www.laptopmag.com/news/chatgpt-will-create-an-entire-powerpoint-slide-for-you-heres-how.)

[9] J. Moran, "Using AI to Teach AI in Duke's MEng Program", Reimagine Education, https://www.reimagine-education.com/using-ai-to-teach-ai-duke-university.

[10] S. Fourtané, "Artificial Intelligence is Critical to the Future of Higher Education", Fierce Education, Jul 8, 2021, https://www.fierceeducation.com/best-practices/artificial-intelligence-critical-to-future-higher-education.

[11] A. Dutta, "Using AI For Personalized Learning", Evelyn Learning, https://www.evelynlearning.com/using-ai-for-personalized-learning/#:~:text=Another%20advantage%20of%20using%20AI,any%20location%20thanks%20to%20AI

Generative AI in education: Strategic forecasting and recommendations

Ivan David Dogan[1], Luka Medvidović[2]

[1]Zagreb School of Economics and Management, Zagreb, Croatia, iddogan@zsem.hr
[2]Zagreb School of Economics and Management, Zagreb, Croatia, luka.medvidovic@zsem.hr

Abstract

The rapid evolution of generative artificial intelligence presents both opportunities and challenges for the future of education, with an underexplored interplay between institutional policy environments and up-to-date curriculums. Utilizing a literature review to understand the current landscape, this study employs scenario planning to identify key drivers and critical uncertainties, leading to the development of four distinct scenario archetypes: Constrained Brilliance, Flourishing Mindscape, Missed Potential, and Unrestrained Experimentation. The research was guided by the following questions: 1. What are the potential scenarios based on varying policy environments and curriculum appropriateness & effectiveness? 2. How can stakeholders navigate these scenarios to ensure AI's ethical and empowering integration in education? Recommendations for the primary stakeholder, that is Higher education institutions, include the development of a comprehensive AI strategy, forming micro R&D's, continuous faculty training, student feedback mechanisms, fostering industry collaborations, and a strong emphasis on fostering critical thinking irrespective of AI integration.

Keywords: *AI, HEI, Education, Strategy, Scenario planning*

1. Literature review

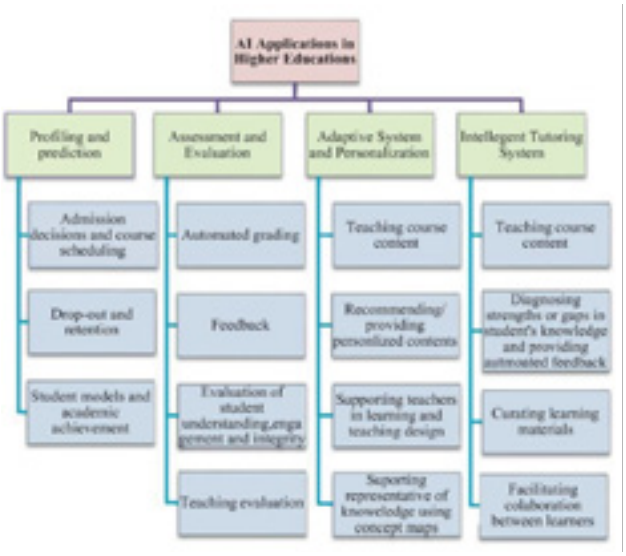
1.1 Overview of AI's current role in education

In the 1970s, the emergence of personal computers set the stage for AI's transformative role in education. Today, AI's capability to deliver individualized learning experiences is undeniable, with a surge in academic investigations underscoring its significance. Tahiru has delved into AI's historical trajectory in education, highlighting both its vast potential and the challenges, such as the risk of diminishing human-centric interactions [1]. Chen et al. charted AI's evolution, from rudimentary tools to sophisticated humanoid robots and chatbots, asserting its pivotal role in elevating instructional quality [2]. Rios-Campos et al. spotlighted AI's broad impact, from

reshaping pedagogical methods to addressing global educational challenges [3]. However, while technology holds promise, its efficacy is contingent on its integration with sound pedagogical strategies, as emphasized by Kerr [4]. Yang et al. accentuated the transformative potential of AI in tertiary education but also underscored the imperative of teacher training and addressing concerns like data security [5]. For Higher Education Institutions (HEIs) strategizing on AI integration, a holistic approach that melds technology's potential with pedagogical excellence is paramount.

As illustrated in Figure 1, Al-haimi et al. categorize various AI applications into four distinct sectors: profiling and prediction, assessment and evaluation, adaptive systems and personalization, and intelligent tutoring systems [6]. These AI-enhanced tools and systems have been instrumental in elevating student outcomes. The achievement of students within higher education settings serves as a vital indicator of the institution's overall quality and efficacy. AI has significantly transformed the teaching and learning landscape in universities, ushering in a new era of collaboration among students. Global classrooms and massive open online courses (MOOCs) exemplify how AI-driven innovations have redefined the higher education environment. Intelligent tutoring systems, in particular, offer myriad benefits, from tailored course content delivery and pinpointing students' knowledge gaps to automated feedback and fostering collaboration among learners.

Figure 1: AI Applications used in HEIs. Source: Al- haimi et al. [6]



The ongoing evolution of AI in education is poised to exceed our current expectations, redefining the essential skill sets students need to be workplace-ready. For instance, AI tools like Teacherbot and IBM's Watson have provided an automated teaching presence, enhancing the learning experience. The recent shift to online teaching and learning, accelerated by the COVID-19 pandemic, has further highlighted the potential of AI. Universities have adopted AI-powered systems like Proctorio and Examity to oversee online exams, ensuring academic integrity. As AI continues to permeate higher education, it's anticipated that these technological advancements will not only enhance the teaching and learning process but also equip students with market-relevant skills, thereby driving economic growth.

1.2. Ethical considerations and challenges of AI in education

AI's integration in education presents ethical dilemmas, encompassing privacy, security, and data use concerns [7]. In medical education, gauging attitudes towards AI and embedding AI literacy in curricula is vital [8]. Ethical challenges also arise from AI's influence on learners, with potential psychological effects and risks of amplifying educational inequalities [9]. Ensuring fairness and inclusivity in AI systems is essential, as is safeguarding students' data through clear guidelines and robust protection measures. Addressing these ethical aspects is crucial for responsibly leveraging AI in education.

2. Scenario planning: Addressing driving forces and critical uncertainties

2.1. Key drivers and critical uncertainties:

2.1.1. Technological integration and ease of use

AI's integration into tools and networks has advanced notably, with models like GPT offering human-like text generation capabilities [10]. In medical education, AI tools support clinical training and decision-making, such as AI-driven virtual patient simulations and diagnostic systems. Additionally, AI's incorporation in educational technologies enables personalized learning experiences. Algorithms analyze data to tailor content, while AI-driven tutoring systems offer individualized feedback. The upcoming years are poised to see even deeper AI integration, emphasizing its growing ease of use and influence. Recently, there's been a noticeable trend of integrating generative AI into commonly used tools. Microsoft Office programs like Word, PowerPoint, and Excel are now harnessing the power of AI for tasks such as content suggestion, data analysis, and design recommendations. Social networks are utilizing AI to generate personalized content feeds and enhance user interactions. E-mail platforms are incorporating AI to draft responses, filter spam, and categorize messages more efficiently. Even browsers are beginning to integrate AI for improved search predictions, content curation, and user experience optimization, marking a significant shift towards a more AI-centric digital environment. Additionally, the interface of AI is becoming more and more user friendly.

2.1.2. Generational tech savviness - Younger generations might be more adept at using AI, while educators might lag.

Generational differences in tech proficiency, especially regarding AI, can lead to knowledge and communication gaps in education. Younger generations, often termed "digital natives," are perceived to be more adept with technology, while older generations, including some educators, might be less familiar [11]. However, Bennett et al. challenged this binary view, noting that exposure doesn't equate to proficiency, and many older individuals have gained tech expertise over time [12]. As AI becomes more integrated into everyday tools, enhancing ease of use, the generational gap narrows, allowing even those who adopted technology later in life to keep pace. Nonetheless, it is plausible that younger generations may have a higher level of

exposure to AI and related technologies due to their upbringing in a digital era. This exposure may result in a greater familiarity and comfort with AI applications, which could potentially create a knowledge and communication gap between educators and students. Educators who are less familiar with AI may struggle to effectively incorporate AI tools and concepts into their teaching practices, while students may have higher expectations and demands for AI integration in their learning experiences. To bridge this potential gap, it is crucial for educators to engage in continuous professional development and training to enhance their technological proficiency, including AI literacy.

2.1.3. Policy strategy - Internal HEI regulations could either empower the constructive use of AI in education and by students or either ignore or restrict it.

Generative AI presents transformative opportunities for higher education in teaching, research, and learning. However, the internal regulations of HEIs stand at a crossroads that will significantly influence these advancements. On one hand, well-structured policies can empower the constructive integration of AI, fostering innovation and enhancing educational experiences. On the other hand, a lack of proactive guidelines or overly restrictive policies can either lead to a regulatory void or stifle AI's potential. Such a scenario, prevalent in about 90% of HEIs [13], could result in decentralized decision-making, causing inconsistent AI adoption across classrooms and varied educational experiences for students.

In the evolving landscape of higher education, the role of Generative AI tools, such as ChatGPT, has been a focal point of discussion. Chan introduced an AI Ecological Education Policy Framework after surveying students and faculty from Hong Kong universities [14]. While many students recognize the ethical dimensions of AI tools like ChatGPT, its misuse continues. Prestigious institutions like Oxford and Cambridge have classified the academic use of AI bots as misconduct. Yet, the undeniable benefits of AI, like personalized feedback, are drawing attention. National AI policies often lean towards ethical considerations, but challenges persist. Organizations like UNESCO champion a human-centric AI approach, emphasizing the importance of ethically driven frameworks.

Historical discussions on AI in education have revolved around policy strategies. Vasoya underscored AI's potential risks in education, suggesting policy countermeasures [15]. In contrast, Gulson et al. posited that achieving full AI regulation might be elusive [16]. Touretzky et al. called for national AI education guidelines [17], while Marino et al. discussed AI's role in special education, proposing an open-source policy approach [18]. Nguyen et al. highlighted the ethical facets of AI in education, advocating for principles centered on autonomy and ethical decision-making [19]. For scenario planning, it's essential to consider these two opposing possibilities - HEIs either fostering the constructive use of AI through empowering regulations or sidelining its potential through neglect or restriction.

2.1.4. Curriculums: AI Enhanced or Left Undeveloped

The "*Survey of US Higher Education Faculty 2023*" showed limited institutional protocols for integrating AI tools like ChatGPT into curricula [20]. As D'Agostino noted, many educators adopt a wait-and-see approach to AI writing tools, with younger faculty being more proactive [21].

While some champion the inclusion of AI tools, others remain cautious due to occasional inaccuracies produced by AI systems. The consensus emphasizes the irreplaceable role of human interaction in education and the need to navigate AI's limitations.

Generative AI is reshaping curriculum development in HEIs. Features and practices like the "Possibility Engine" and the "Socratic Opponent" approach enhance student engagement and critical thinking. The "Collaboration coach" and "Guide on the Side" support educators in content creation and guidance, while the "Personal Tutor" and "Co-designer" roles personalize learning and aid in curriculum design [22]. In the rapidly evolving educational landscape, the cultivation of creativity and critical thinking within the curriculum is paramount. The increasing impact of AI across various domains underscores the significance of cultivating these abilities among students. By incorporating these competencies into educational curricula, we equip students to tackle upcoming academic and professional challenges and to play responsible roles in an AI-pervasive society.

In conclusion, curriculums are at a juncture: they can either be enhanced with AI, fostering critical thinking and creativity, or remain undeveloped, potentially leaving students ill-equipped for an AI-driven future. This presents another set of opposing possibilities essential for scenario planning.

Critical Uncertainties	**Restrictive Policies on AI**	**Stimulative Policies on AI**
AI Enhanced Curriculums	Scenario 1: *Constrained Brilliance*	Scenario 2: *Flourishing Mindscape*
Limited AI Integration in Curriculums	Scenario 3: *Missed Potential*	Scenario 4: *Unrestrained Experimentation*

2.2 Scenario planning matrix and archetypes:

Scenario 1: Constrained brilliance

This scenario underscores the tension between AI's potential and restrictive policies. While policies aim to safeguard interests, they can hinder AI's innovative capabilities in education. The risk of a shadow market for unregulated AI tools emerges, raising ethical concerns about legality, safety, and data privacy.

In the "Constrained brilliance" scenario, HEIs implement strict regulations on AI's integration, particularly Generative AI, in education. Despite these constraints, educators find innovative ways to harness AI's potential within set boundaries, emphasizing students' critical and creative thinking development. However, the stringent regulations may inadvertently give rise to a shadow market for unregulated AI

tools. Students and educators, driven by the desire for enhanced learning and teaching, might turn to these unauthorized resources. This landscape presents challenges, primarily ensuring AI tools align with institutional policies. The covert use of AI tools raises ethical issues, including legality, safety, and data privacy concerns. Yet, these challenges can also pave the way for opportunities. The positive outcomes of AI-enhanced curriculums can be leveraged to advocate for more lenient AI regulations within HEIs. The market might also see the emergence of AI

tools tailored for restrictive environments, balancing AI's benefits with HEI policies. This scenario emphasizes the importance of collaborative platforms for educators to share insights and navigate the evolving AI educational landscape collectively.

Scenario 2: Flourishing mindscape

In this scenario, education flourishes with AI's transparent and open integration. The emphasis is on continuous professional development for educators, ensuring they're equipped to harness AI's potential. While trust is fostered through transparency, challenges like data privacy and AI biases persist.

The "Flourishing mindscape" envisions a harmonious blend of AI and education. Here, students develop critical, strategic, and creative skills, bolstered by AI's seamless integration. Emerging AI-driven educational enterprises offer innovative teaching methods, and students in these environments excel globally, showcasing their preparedness for complex global challenges. Yet, concerns arise. The rapid AI integration raises questions about maintaining educational quality and the evolving relevance of curriculums. On the brighter side, collaborations between educational institutions and AI companies are enhancing curriculum quality. As AI's role in education grows, further research is essential to understand its long-term effects on learning.

Scenario 3: Missed potential

Representing an underutilized AI landscape, this scenario highlights the barriers preventing AI's full educational integration. Advocacy becomes crucial, emphasizing AI's benefits and pushing for its broader adoption. Collaboration in AI tool creation ensures tools meet genuine educational needs.

This scenario paints a picture of an educational landscape where AI's vast capabilities remain largely untapped due to stringent regulations and outdated curricula. The result is a "brain drain," with talented students seeking more progressive educational environments. The reliance on traditional methods may leave students ill-prepared for the future job market, impacting the nation's workforce and economy. The challenges are clear: there's a pressing need to convey the importance of AI integration to policymakers and address the widening skill gap among students. However, there's hope. Passionate educators and students are advocating for AI's inclusion in education, emphasizing its myriad benefits. Innovative educators are experimenting with hybrid teaching models, blending traditional methods with AI, ensuring students get the best of both worlds within existing policy constraints.

Scenario 4: Unrestrained experimentation

This scenario paints a world of boundless AI experimentation in education, offering both risks and rewards. The challenge lies in balancing AI's capabilities with the human touch in education. Ethical dilemmas arise from unregulated AI, emphasizing the need for responsible AI use.

In the "Unrestrained Experimentation" scenario, education dives deep into AI's potential without a structured curriculum to guide its integration. Schools become testing grounds for various AI methods, leading to diverse outcomes. This unregulated approach, reminiscent of the wild west, results in varied student experiences, with some thriving and others struggling. Such inconsistency raises questions about AI's true role in education: is it a game- changer or just another tool? Beyond varied outcomes, ethical concerns emerge, especially regarding student data privacy. Each new tool introduced risks potential misuse of sensitive information. Additionally, the varied effectiveness of these tools could widen educational disparities. However, there's a silver lining. The vast experimentation produces rich data, allowing for a deeper understanding of AI's impact. This scenario also presents an opportunity for global collaboration, where educators share insights on AI tools, refining and improving AI-driven educational methods.

3. Strategic recommendations:

This section provides a comprehensive examination of the strategic incorporation of AI in the field of education, with a specific emphasis on providing customized guidance for important individuals involved in the process. Practical measures for HEIs are presented.

For HEI

HEIs are currently facing a critical juncture in the era of AI. Al-Haimi perceptively noted the profound influence of artificial intelligence on these establishments [6]. With the ongoing advancement of artificial intelligence, the landscape of HEIs is being reshaped, leading to an increasing need for positions that require specific knowledge in AI technology.

1. **Develop a comprehensive AI strategy**: Align the institution's AI strategy with its educational goals and the evolving labor market demands. Integrate AI-focused courses and infuse AI modules into existing curricula to ensure students gain both foundational and practical AI knowledge.
2. **Faculty professional development**: Prioritize continuous training for faculty to keep them updated with the latest AI advancements and pedagogical methods. This ensures educators are equipped to guide students effectively in AI subjects. More importantly, it dismisses or minimizes the danger of generational gaps.
3. **Foster industry collaborations**: Partner with leading AI companies to offer students real-world experiences, such as internships and workshops. This bridges the gap between academia and industry, providing students with hands-on AI application insights.
4. **Invest in infrastructure, curriculum innovation, and R&D**: Dedicate resources to establish AI labs, procure state-of-the-art software, and licenses. Additionally, establish multifunctional micro R&D units composed of young faculty in order:

a. **To drive innovation and research collaborating with all the stakeholders of the AI revolution**. Emphasize the importance of a collective approach in AI tool development for educational purposes. This collaborative model should involve AI developers, educators, and students. Such a synergy ensures that the developed tools are not only technologically advanced but also pedagogically effective and tailored to user needs. Educators bring in their teaching expertise and understanding of student needs, while students offer insights into their learning experiences. Merging this with the technical prowess of AI developers results in tools that are truly optimized for the educational environment. This collaborative approach is particularly relevant across various scenarios, including but not limited to "Flourishing Mindscape" and "Constrained Brilliance."

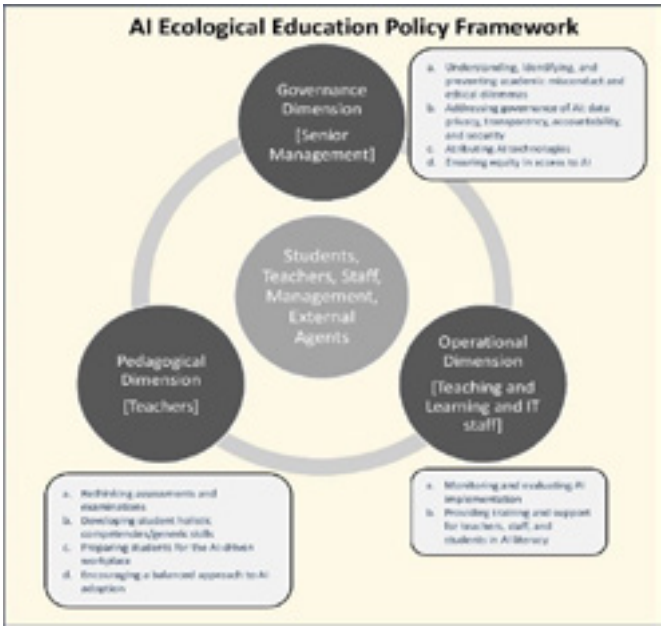
b. **To develop enhanced curriculums.**

   Despite the rise of artificial intelligence in education, curricula must prioritize developing students' critical thinking skills. It's essential that students remain active thinkers, not just passive recipients of AI-generated knowledge. Especially in scenarios like "Unrestrained Experimentation," there's a risk of over-relying on AI, potentially sidelining students' analytical abilities. The role of human critical analysis and problem-solving must not be overshadowed by technology.

5. **Define AI ethical code and policy**: Establish clear guidelines and ethical standards for AI use within the institution. Make sure to define the desired ways of conduct and behaviors, to make sure the codex is derivable to action and execution. This will address potential confusions and ensure responsible AI practices.

   As proposed by Chan and depicted in **Fig. 2**, AI Education Policy Framework provides a structured approach to AI integration in higher education [14]. Comprising three core dimensions—Pedagogical, Governance, and Operational—it encapsulates the multifaceted nature of AI's role in universities. By assigning roles to specific stakeholders, it ensures a synchronized and strategic approach to AI adoption, balancing its myriad benefits and inherent challenges. In the process of implementing AI tools and technologies in Education, The ethical framework made by The Institute for Ethical AI in Education [23], should also be consulted.

Figure 2: AI education policy framework Source: Chan, [14]



6. **Implement a feedback mechanism: Establish a robust student feedback system**: Given that students are at the forefront of experiencing AI tools' impact, it's vital for higher education institutions (HEIs) to prioritize their feedback. This will help assess the effectiveness and ethical implications of AI tools in real-world educational settings. Especially in scenarios like "Flourishing mindscape" and "Unrestrained experimentation," understanding the tangible effects of AI on students is crucial. By actively seeking and valuing student insights, HEIs can make informed decisions, ensuring AI tools are not only advanced but also pedagogically sound and student-centric.

Individual educators

For educators navigating the AI revolution in education, adaptability and continuous learning are key. While AI offers enhanced pedagogical tools and personalized learning, educators must stay updated with evolving technologies. They should seek AI-focused training, ensuring they can teach AI ethics, biases, and responsible use. This empowers students to critically engage with AI, rather than passively receiving its content.

1. **Recognize AI's potential and challenges:** Faculty should be aware of AI's capacity to enhance teaching methods while also understanding the need to stay updated with its rapid evolution.
2. **Prioritize professional development**: It's essential for educators to pursue AI-centric training, equipping themselves to address AI's ethical considerations, potential biases, and its responsible application in teaching.

3. **Encourage active student participation:** While AI offers tailored learning experiences, educators should foster an environment where students actively engage with, critique, and provide feedback on AI tools.
4. **Instill ethical considerations**: Beyond technological adeptness, students should be educated on the ethical dimensions of AI, including data privacy concerns, inherent biases in algorithms, and the broader societal implications of AI utilization.

Other stakeholders

Students: Students should actively engage with AI tools, understanding their data usage and making informed decisions in an AI-enhanced educational setting.

Regulators: AI regulation should promote innovation while safeguarding stakeholders. Engaging with the educational community ensures practical and ethical policy formulation.

AI developers: Developers should prioritize transparent, ethical AI tools tailored to educational needs. Collaborations with educators and students ensure tools are user-centric, emphasizing fairness, equity, and data protection. The Transparent AI Algorithms effort places significant emphasis on the fundamental significance of clarity and transparency in the utilization of AI tools within the educational domain. Acknowledging the importance of trust in facilitating effective learning, this proceeding argues for the implementation of AI algorithms that exhibit transparency in their operations rather than functioning as opaque black boxes. In situations such as the case of "Flourishing mindscape," where there is a significant reliance on the capabilities of AI, the importance of transparent algorithms becomes even more evident.

5. Conclusion

In conclusion, this paper underscores the imperative of responsible integration of Generative AI (G-AI) in education, emphasizing collaboration between academia and industry, investment in faculty training, and ethical considerations within HEIs. It presents potential future scenarios, from strict regulations to seamless AI integration, advocating for a balanced approach that upholds critical thinking and ethics alongside AI-driven enhancements. Practical recommendations are offered for HEIs, educators, and developers, highlighting the importance of comprehensive AI strategies, ongoing professional development, and active student feedback. Overall, this paper contributes to the ongoing discourse on the ethical and effective utilization of generative AI in education, guiding institutions toward a future where AI complements traditional teaching while nurturing critical thinking among students.

References

[1] Tahiru, F. (2021). AI in Education: A Systematic Literature Review. J. Cases Inf. Technol., 23, 1-20.

[2] Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: A Review. IEEE Access, 8, 75264-75278.

[3] Rios-Campos, C., Cánova, E.S., Zaquinaula, I.R., Zaquinaula, H.E., Vargas, D.J., Peña, W.S., Idrogo, C.E., & Arteaga, R.M. (2023). Artificial Intelligence and Education. South Florida Journal of Development.

[4] Kerr S. T. (2004). Toward a Sociology of Educational Technology (ch) in: Handbook of Research on Educational Technology. Available at: https://faculty.washington.edu/stkerr/ETHB04.html

[5] Yang, C., Huan, S., & Yang, Y. (2020). A Practical Teaching Mode for Colleges Supported by Artificial Intelligence. Int. J. Emerg. Technol. Learn., 15, 195-206.

[6] Al-haimi, B., Hujainah, F., Nasir, D., & Alhroob, E. (2021). Higher Education Institutions with Artificial Intelligence: Roles, Promises, and Requirements. Applications of Artificial Intelligence in Business, Education and Healthcare. https://doi.org/10.1007/978-3-030-72080-3_13

[7] Dignum, V. (2021). The role and challenges of education for responsible ai. London Review of Education, 19(1). https://doi.org/10.14324/lre.19.1.01

[8] Wood, E., Ange, B., & Miller, D. (2021). Are we ready to integrate artificial intelligence literacy into medical school curriculum: students and faculty survey. Journal of Medical Education and Curricular Development, 8, 238212052110240. https://doi.org/10.1177/23821205211024078

[9] Akgun, S. and Greenhow, C. (2021). Artificial intelligence in education: addressing ethical challenges in k-12 settings. Ai and Ethics, 2(3), 431-440. https://doi.org/10.1007/s43681-021-00096-7

[10] Sapci, A. and Sapci, H. (2020). Artificial intelligence education and tools for medical and health informatics students: systematic review. Jmir Medical Education, 6(1), e19285. https://doi.org/10.2196/19285

[11] Prensky, M. (2001). Digital Natives, Digital Immigrants. MCB University Press, Vol. 9 No. 5. https://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf

[12] Bennet, S., Maton K., Kervin L (2008). The 'digital natives' debate: A critical review of the evidence. British Journal of Educational Technology, vol. 39, 775-786. https://doi.org/10.1111/j.1467-8535.2007.00793.x

[13] UNESCO (2023a). UNESCO survey: Less than 10% of schools and universities have formal guidance on AI. (Accessed on 05.09.2023). Available at: https://www.unesco.org/en/articles/unesco-survey-less-10-schools-and-universities-have-formal-guidance-ai

[14] Chan, C.K.Y. (2023). A comprehensive AI policy education framework for university teaching and learning. Int J Educ Technol High Educ 20, 38. https://doi.org/10.1186/s41239-023-00408-3

[15] Vasoya, N. (2023). The role of parents and educators in managing the risks of artificial intelligence. Asian Journal of Education and Social Studies, 41(4), 1-5. https://doi.org/10.9734/ajess/2023/v41i4899

[16] Gulson, Kalervo N., Sam Sellar, and P. Taylor Webb (2022). Algorithms of Education: How Datafication and Artificial Intelligence Shape Policy. University of Minnesota Press. http://www.jstor.org/stable/10.5749/j.ctv2fzkpxp

[17] Touretzky, D., Gardner-McCune, C., Martin, F., & Seehorn, D. (2019). Envisioning ai for k-12: what should every child know about ai?. Proceedings of the Aaai Conference on Artificial Intelligence, 33(01), 9795-9799. https://doi.org/10.1609/aaai.v33i01.33019795

[18] Marino, M., Vasquez, E., Dieker, L., Basham, J., & Blackorby, J. (2023). The future of artificial intelligence in special education technology. Journal of Special Education Technology, 38(3), 404-416. https://doi.org/10.1177/01626434231165977

[19] Nguyen, A., Ngo, H., Hong, Y., Dang, B., & Nguyen, B. (2022). Ethical principles for artificial intelligence in education. Education and Information Technologies, 28(4), 4221-4241. https://doi.org/10.1007/s10639-022-11316-w

[20] PRG (2023). Primary Research Group: Survey of US Higher Education Faculty 2023, Views on and Use of ChatGPT. (Accessed on 4.9.2023). Available at: https://www.primaryresearch.com/AddCart.aspx?ReportID=757

[21] D'Agostino, S (2023). GPT-4 Is Here. But Most Faculty Lack AI Policies. (Accessed on 03.09.2023). Available at: https://www.insidehighered.com/news/2023/03/22/gpt-4-here-most-faculty-lack-ai-policies

[22] UNESCO (2023b). ChatGPT and Artificial Intelligence in higher education. Quick start guide. (Accessed on 7.9.2023). Available at: https://www.iesalc.unesco.org/wp-content/uploads/2023/04/ChatGPT-and-Artificial-Intelligence-in-higher-education-Quick-Start-guide_EN_FINAL.pdf

[23] UB (2023). The University of Buckingham's Institute for Ethical AI in Education. The Ethical Framework for AI in Education. (Accessed on 3.9.2023). Available at: https://www.buckingham.ac.uk/wp-content/uploads/2021/03/The-Institute-for-Ethical-AI-in-Education-The-Ethical-Framework-for-AI-in-Education.pdf

What makes students dislike quantitative courses?

Dina Vasić[1], Tomislav Kesić[2] and Ana Rauker[3]

[1]Zagreb School of Economics and Management, Zagreb, Croatia, dvasic@zsem.hr
[2]Zagreb School of Economics and Management, Zagreb, Croatia, tkesic@zsem.hr
[3]Zagreb School of Economics and Management, Zagreb, Croatia, arauker@zsem.hr

Abstract

Previous studies suggest that there are several reasons why students do not like quantitative courses. Murtonen (2003) found that students tend to polarize academic subjects into 'easier' language, major, and qualitative subjects and 'harder' mathematical, statistical, and quantitative subjects. Students also cited superficial teaching, linking theory with practice, unfamiliarity with and difficulty of concepts and content, creating an integrated picture of research, and negative attitudes toward these studies as reasons for difficulties in quantitative courses. Ganyaupfu (2013) found that lecturer competence, teaching methods, and quality of learning materials have a significant positive influence on undergraduate students' academic achievements in quantitative business courses. Yousef (2011) found that academic performance in quantitative courses differs across fields of study, nationality, type of high school, major track in high school, gender, and age. Finally, Yousef (2017) found that teaching style and English language and communication greatly influence undergraduate business students' academic performance in introductory quantitative courses. Most recent findings suggest that several factors influence students' dislike of quantitative courses. Dabas 2021 found that female students who performed better in quantitative courses had stronger self-regulated learning skills, such as metacognitive self-regulation and time management. Singh 2017 found that motivation towards learning quantitative subjects is strongly related to learning value, attitude, and learning environment. These findings suggest that improving teaching methods, learning environments, and self-regulated learning skills may help students perform better in quantitative courses. In this paper we reveal the literature review of the further studies in the field, making this paper the first in a row of a comprehensive research project.

ISSN 2991-9371

Storytelling as a promotional and an educational tool

Maja Martinović[1], Tara Aždajić[2] and Zdravka Biočina[3]

[1]Zagreb School of Economics and Management, Zagreb, Croatia, mmartino@zsem.hr
[2]Zagreb School of Economics and Management, Zagreb, Croatia, tazdajic@student.zsem.hr
[3]Zagreb School of Economics and Management, Zagreb, Croatia, zbiocina@zsem.hr

Abstract

Storytelling is one of the most popular techniques of the 21st century in public speaking and promotion. One important reason for that is the growing importance of the digital native segment. Furthermore, stories in presentations, videos or various commercials keep audience's attention and help with retention of information but also affect listeners on an emotional level, not just rational one. This is a content marketing strategy used to capture the attention, to educate, to engage customers or stakeholders, to attract enrollment or to nurture all ecosystems of the entity. Today, stories are the subject of research for many scientists from different fields, not just folklore (Chaudard and Collin Lachad, 2019). For instance, neuroscientific research has shown that the human brain is predestined for narrative structure. The importance of stories has since been expanded beyond culture and art to media (television, radio), journalism, digital marketing, and other means of promotion. Storytelling can be a useful tool for both companies and institutions and serve for profit or non-profit goals. This paper examines the importance of story-based content in promotion and education and analyzes innovative examples of storytelling in different professions. One of the bright examples analyzed in the paper is the Croatian mountain rescue service (HGSS), a non-profit organization, that has been chosen to show their innovative ways of using storytelling as an educational tool and a tool for improving consumer engagement. Their effective communication with the public (both Croatian and non-Croatian) uses common folk elements in a new, memorable, and humorous way and leads the audience from something they already know to something they have to learn. By analyzing good techniques of storytelling used in different professions, this research may help firms and institutions to attract or engage prospective and current customers, especially digital natives. Also, it can be a valuable contribution to lecturers in preparing students to use different content marketing strategies and to improve their own presentations' skills.

Keywords: *Storytelling, promotion, education, consumer engagement, digital native*

ISSN 2991-9371

New Approaches to Knowledge Building

SESSION CHAIR:

Karmela Aleksić-Maslać

Exploring Situational Variables in Higher Education Institutional Strategies

Zoran Barac[1]

[1]Zagreb School of Economics and Management, Zagreb, Croatia, zbarac@zsem.hr

Abstract

Situational or contingency variables refer to factors or conditions in a specific context or situation that can influence the outcome or effectiveness of a particular action, decision, or strategy. These variables are not constant and can change depending on the circumstances, which is why they are often referred to as situational or contingent. In various fields such as governance or management, situational or contingency variables play a significant role in understanding and predicting behavior, decision-making processes, and outcomes.

This article will explore critical situational variables that impact the formulation of strategies in Higher Education Institutions, including changing global demographics, increasing internationalization, changes in public expenditures for Higher Education, and growing competition among Higher Education Institutions and national Higher Education Systems.

These variables vary across different situations or contexts and can significantly influence decision-making, planning, and strategic outcomes. Recognizing the importance of situational variables helps Higher Education Institutions make more informed and targeted decisions and adjust their strategies accordingly for the best possible outcomes.

Keywords: *Governance, Corporate Governance, Leadership, Higher Education Systems, Higher Education strategies, Situational Variables*

ISSN 2991-9371

Credit Suisse: Negotiating its Takeover by UBS as it was too big to fail

Claude Cellich

International Institute in Geneva, Geneva, Switzerland, ccellich@iig.ch

Abstract

After 167 years of existence, Credit Suisse, Switzerland's second largest bank with global operations merged UBS, the country's leading bank. This merger was the result of CS substantial losses over the years and management having lost confidence among depositors and investors. What triggered the withdrawal of huge deposits in CS was due to the bankruptcy of California's Silicon Valley Bank followed by other US banks considered financially weak. As CS was too big to fail and systemic, the Swiss Authorities were concerned that CS problems could provoke panic among investors worldwide and damage the reputation of the country's financial institutions. In view of the emerging crisis, the CEOs of CS and UBS reached agreement in four days under the leadership of the Switzerland's Minister of Finance and in consultation with representatives of the National Bank and the Swiss Financial Market Supervisory Authority. The role of third parties and the rapidity it took to save CS makes this negotiation rather unique. Due to the CS crisis, several changes in legislation and management practices suggestions are made to avoid such a situation repeats itself.

Key Words: negotiation analysis, third parties, toxic issues.

1. Introduction

On March 19th, 2023, the Swiss Federal Council announced the acquisition of Credit Suisse (CS) by UBS. The decision was made late on Sunday ahead of opening Asian markets the next day to avoid turmoil among financial institutions worldwide. The situation at CS was becoming critical as it was losing billions of deposits by investors and clients. In fact, clients were withdrawing $10 billion a day [1]. The situation deteriorated further when on March 15, the largest shareholder (Saudi National Bank) with a 10% stake in CS ruled out any additional financial assistance [2]. However, an article on 10 July mentioned that the Saudi National Bank was ready to invest $ 5 billion in CS thus becoming the largest stockholder representing 40% of the bank [2]. According to the Swiss Financial Supervisory Authority (FINMA), foreigners cannot account more 10% of a bank unless (FINMA) approves it. The Saudi National Bank offer was not accepted. This decision created a panic among investors and depositors, despite an

ISSN 2991-9371

emergency line of credit of CHF 50 million provided by the Swiss National Bank [3]. By then, CS shares were losing most of their value closing at CHF 1.86 cents on Friday, March 17th [4]. This situation was a consequence of the collapse of Silicon Valley Bank (America's 16th largest bank) purchased by JP Morgan on May 20 followed by Signature bank (acquired by Flagstar Bank) and First Republic Bank (taken over by JP MorganChase) [4]. Once depositors lose confidence in their bank, they start closing their accounts leading to a panic movement among other depositors and possible bank failures. In other words, a bank without depositors is not viable nor sustainable. That was the situation of Credit Suisse in early 2023.

For years, CS incurred losses due to risky investments in Greensill Capital (10 Bill) and Archegos hedge fund (100 billion) as well as a series of scandals that led to the payment of heavy fines [5]. Despite these losses, management failed to introduce an adequate control system and continued to engage in a culture that encouraged speculative investments. Although CS was reporting losses, the bank continued to compensate its key executives with hefty bonuses while the shares were declining to extreme low levels. For example, between 2007 and 2014, the CEO received a bonus of CHF160 million when the shares lost 40% of their value [6]. During the period (2015 to 2020), his successor was paid CHF 40 million while the shares dropped another 60% [6].

As CS was on the brink of bankruptcy, the Swiss Federal Council led by Keller-Sutter, the Finance Minister, representatives from the Swiss National Bank and the Swiss Financial Market Supervisory Authorities (FINMA) met over the weekend to find a solution to the bank's critical situation [7]. In addition, discussions with Janet Yellen, US Treasury Secretary and with the British Prudential Regulation Authority were held to save Credit Suisse, as it was too big to fail.

The decision by the Swiss Authorities was to let UBS acquire CS to protect the image and reputation of Swiss financial institutions. Subsequently, the CEOs of both banks, Ralph Hamers of CS and Colin Kelleher of UBS entered into negotiations. CS hired Centerview for advice and Rothschild provided further counsel. UBS hired JPMorgan and Morgan Stanley. As UBS was in a powerful position, it was looking for extracting the best deal it could obtain. In fact, UBS was considering offering $ 1 billion. After discussing with the Swiss Authorities, UBS offered $3 billion considered much too low by CS, as it was 60% below the value of the bank's market capitalization [8]. A counteroffer of $3.25 billion by UBS was accepted. The purchase of CS was conditional to a guarantee of CHF 100 billion by the Swiss National Bank and set aside another CHF 9 billion in case UBS incurs losses due to CS toxic assets. Bondholders were excluded from the deal losing CHF16 billion as FINMA introduced a law that removed them from any claims and a legislation excluding shareholders of the right to vote on the deal. The merger gave CS shareholders one UBS share for 22.48 CS shares.

The merger of CS and UBS results in a mega bank valued at CHF 333 billion (UBS 167 and CS 166). The new UBS will reinforce its position as the world's leading wealth management with $5 trillion of invested assets. However, the merger is expected to have a negative impact on employment, particularly among the 36,000 CS employees worldwide [9].

2. Literature Review

Over the past several years, a great deal of newspaper articles in the local press and the Financial Times have appeared covering the various problems encountered by Credit Suisse. The articles covered mainly with the penalties paid by the bank for money laundering, risky investments and changes in top management. However, Chaney (2015) addressed the main weaknesses of the banking industry, particularly Credit Suisse for paying hefty bonuses to senior management at the time the bank was incurring losses and the shares continued to drop in value [6].Since the takeover of CS by UBS in March, several articles are providing more details concerning the reasons leading to the downfall of CS: A similar situation took place in Iceland in 2008, when three banks went bankrupt causing a national financial crisis. These three banks (Kaupthing, Landsbanki and Glitnir) had an external debt that was more the 11 times the national GDP. These banks were too big to fail and too big to save. These failures led the Iceland to an economic depression, a depreciation of 50% of its currency, a wave of bankruptcies and rising unemployment. To overcome the crisis, the government obtained a loan of $5.1 billion from IMF and Scandinavian countries introduced drastic measures including higher taxes and a decrease in government spending. The bank executives of the three banks served time in jail for fraudulent loans, embezzlement and market manipulation [10].

3. Negotiation Analysis

The analysis of the negotiation between CS and UBS follows the framework developed by Watkins, consists of 7 key essential features of negotiations as listed below [11]

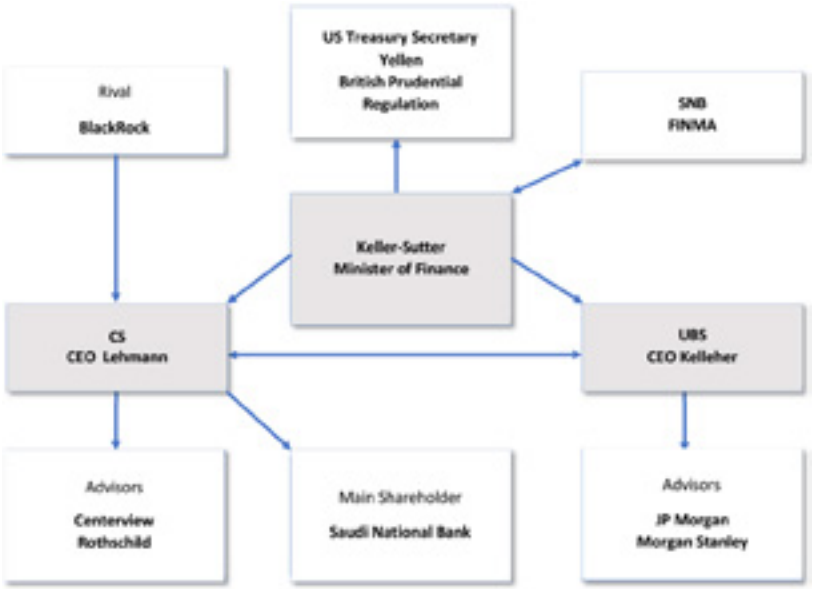
1. Parties: Who are the participants, potential ones, coalitions and party map
2. Rules: what are the rules? Applicable laws, social and professional codes if any
3. Issues: What issues will be included in the agenda? Relationship aspects, toxic issues
4. Interests: What are the goals each party is pursuing? Shared and personal interests
5. Alternatives: What would happen in case both sides cannot reach agreement, what is the walk-away position, BATNA and time
6. Agreements: What is the bargaining range, access to strategic information and shared uncertainties
7. Linkages: the negotiation involve several discussions with other regulating bodies, consulting firms, competing banks and governments.

3.1 Parties

As can be seen during the week of 13th March, several third parties were involved in the discussions without the participation of the main ones namely representatives from CS and UBS. In the first instance, the Swiss Minister of Finance held consultations with Janet Yellen, US Treasury Secretary and a representative of the British Prudential Regulation Authority, as they were concerned about CS failure and its potential impact on world markers [7]. Later on,

discussions took place with a representative of BlackRock, the largest global asset management investment interested to either buy CS or acquire a part of the bank. However, BlackRock dropped out on 17th March after the Swiss Authorities made known of their preference for a takeover by UBS. In early March, the CEO of CS was negotiating a major investment from the Saudi National Bank. It was only when the Swiss Federal Council decided that that CS will be acquired by UBS, that both CEOs were invited to start negotiating. The deadline set up by Swiss Federal Council left both parties hardly any time to prepare and develop appropriate strategies and tactics, select team members, setup the bargaining range and identify potential concessions. The negotiations between CS and UBS took only a few days. All the parties involved in the negotiation are show in the party map below:

Figure 1. Negotiation Map



3.2. Rule

Generally, negotiations between two large-scale organizations begin with a high-level invitation to negotiate consisting of explanatory discussions followed by formal negotiations and if successful an agreement is reached. In this case, there were no set rules. However, as the negotiations progressed, the Swiss Authorities passed a new law in extremis to remove bondholders to any claim and excluded stockholders from voting on the merger.

3.3. Issues

They were several issues involved in the negotiation. Firstly, was the valuation of CS where both CEOs disagreed. Secondly, was the potential toxic issues that UBS may be responsible. To overcome the toxic issues, the Swiss Authorities provided UBS with CHF 9 billion to cover potential expenses the bank maybe financially liable. For the Swiss Authorities, the main issue was to prevent CS to file for bankruptcy and to maintain the reputation of Swiss financial institutions.

3.4. Interests

CS interests were to stop the outflow of funds from its investors /depositors and remain independent. It also wanted to regain the confidence of its clients and regain its reputation as a first- class bank. UBS was not interested in the merger but became involved at the recommendation of the Swiss Authorities. Despite the lack of interest, UBS was concerned that the bankruptcy of CS could have a negative impact on the Swiss banking sector.

3.5. Alternatives

They were several alternatives to resolve the crisis CS was facing as listed below [12]:

- Let the bank file for bankruptcy
- Nationalize the bank
- Let it acquired by another bank
- Obtain major investments from Saudi National Bank and other financial institutions
- Sell part of the bank to other financial institutions
- Have it merged with UBS.

After considering the various options, the Swiss Authorities decided to let UBS acquire CS. The main reasons were for CS to avoid bankruptcy, to remain a Swiss-based company and to protect the reputation of Swiss banks.

3.6. Linkages

The downfall of CS was due in part to the bankruptcies of Silicon Valley Bank followed by the Signature Bank and First Republic. Investors and depositors became concerned about the financial stability of these banks that led to the withdrawal of deposits. As CS is too big to fail, the Swiss parliament, the Swiss National Bank and the Swiss Financial Supervisory Authority became involved in the negotiation not only to save CS but more importantly to protect the reputation of the Swiss banking sector. Once banks lose confidence among the public and investors, it is hard for them to regain their trust.

4. Agreement

The negotiations that led to agreement did not follow negotiation principles namely preparation before meeting the other parties, interacting with the other party, exchanging concessions and finally reaching agreement. In this case, the Minister of Finance made the major decisions as well as setting of deadline and providing financial guarantees to UBS. Both parties had not much time to prepare and to reach agreement. Preparation is crucial for any negotiations particularly when a merger is between two large banks. Generally, preparation represents 70% of the time it takes to negotiate. The remaining 30% is for interaction between the parties [13]. As far as power is concerned, negotiation power has a lot to do with perception. In other word, if the other party thinks you are in a powerful position, even if it is not the case, you have power. Power derives from several sources including situational, institutional, relational and personal. Other sources of power such as knowing the other party, knowing competition, having alternatives/options, setting the agenda, having time to prepare and setting the deadline can enhanced one's negotiating power. In this particular situation, it is difficult to see how the CEO of CS entered the negotiation in powerful position. Although the power was with UBS however, CS did have some power including the financial guarantee from the National Bank of Switzerland. Another argument, CS could have used was the fact that BlackRock was interested in buying CS or part of it as well as the offer from the Saudi National Bank. This interest by a reliable third party could have increased the value of CS and used to obtain a higher offer. Despite the loss of deposits and the lack of confidence, the bank had valuable assets. When UBS made an initial offer of $3 billion, the CS negotiator instead of saying that it was too low, he should have replied, "how did you arrive at that amount". This would have started a dialogue based on facts that could be justified. Although, UBS increased its offer to CHF 3.5 billion. It is not clear why CS did not ask for more. Having no other alternative in sight and negotiating under time constraints and pressure from the world financial markets and the Swiss Federal Council, CS accepted this second offer without obtaining guarantees to protect its investors and employees.

5. Post agreement

Shortly after the announcement of the agreement, members of the Swiss parliament wanted to know more of what took place during these discussions including the CHF109 billion of guarantee extended to UBS. There is also the possibility of legal action taken by bondholders and CS executives for having lost their investment due to an emergency law introduced that

week. Once the merger was agreed, both CEOs of CS and UBS resigned and Mr. Ermotti named to head the new UBS [14]. Mr. Ermotti, the former CEO of UBS between 2011 and 2020 managed successfully the bank particularly during the period post 2008. Sergio Ermotti took over UBS on the 5th April after heading Swiss Re, the world's leading provider of reinsurance, commercial insurance and digital insurance for the last 2 years. Soon after his nomination, the value of UBS shares gained 2.7% [15]. It seems that the Swiss authorities selected Sergio Ermotti as the new CEO to restore confidence in the Swiss economy and in the banking sector, as he was respected and well connected in the international financial community.

The merger between the two banks will take several years before CS activities and staff are fully integrated. The merger is expected to generate a yearly cost reduction of more than $ 8 billion by 2027. Legal action by bondholders and major shareholders to recover their investments are likely to take place. It appears that the decision of excluding them was made ahead of time and possibly without their knowledge. This case shows that when a bank becomes too big to fail, national interests prevail over the interests of the bank and shareholders. In these negotiations, several of them took place under time pressure. The first one between the Federal Council, another with US Treasury Secretary and British Prudential Regulation Authority. Finally, negotiations were held with CS and UBS. After reaching agreement, negotiations took place between the Swiss Federal Council and Sergio Ermontti. These negotiations are an example of multiparty negotiations involving several parties having common or complimentary interests.

On Friday 11 August, UBS announced the reimbursement of the guaranty provided by the government to cover the costs resulting from bad investments and fines incurred by CS estimated at CHF170 billion. [14] This action by UBS shows that CS was not in a dire financial situation.at the time of the take-over. In fact, it is estimated that CS is worth anywhere between $4 and 8 $billion. Moreover, UBS is no longer under government overseeing its management decision. On September 6, 2023, the CEO of FINMA resigned due to health problems. His resignation comes 6 months after the merger of CS and UBS [16].

The merger of CS and UBS followed the same path of other bank in difficulties including the take-over of Signature Bank by Flagstar Bank on 20 March, Silicon Valley Bank acquired by First Citizens Bank on 27 March and First Republic Bank by JP Morgan Chase on May 1st. These acquisitions show the need of regulatory agencies to expedite the negotiations process concerning banks in difficulties to avoid disruption in the financial sector.

6. Conclusion

In conclusion, the merger between CS and UBS highlighted several points to avoid in such negotiations. Firstly, one should not panic even when the situation was unfavorable and time is short. An interim solution to gain time before negotiations was another possibility. Another point is to keep a clear head and look at the facts by going to the balcony to have an overall view of the situation [17]. By going to the balcony, negotiators can have a better understanding of the situation and starting to identify potential trade-offs. Furthermore, a list of critical questions prepared in advance would enable CS to find out what UBS is looking for. Answers to these questions could have provided CS with key information for productive discussions that can lead to narrowing the field of agreement.

The role of third parties in this case was critical by providing the necessary guarantees for the merger to take place. Inputs of outside consultants are not clear nor what their contributions were. Consultants need to be well - briefed before they get involved and provide useful advice. It is questionable, that the consultants were of real value in view of the lack of time and the results of the agreement. Generally, for complex and difficult negotiations as the merger between CS and UBS could take months and require the involvement of various technical teams. For example, the merger between Renault and Nissan consisted of a large team of engineers, financial analysts and executives. The negotiations took 8 months to conclude a mutually satisfactory relationship that can withstand the threats of competition over the long run [18]. In late June 2023, the Swiss Federal Council decided to establish a special task force to analyze the demise of CS and the role played by third parties that can lead to new regulations concerning large banks that are too big to fail. When the report become available in 2024, it is likely, that information will emerge invalidating some of the conclusions contained in this paper. The Task Force will keep its files secret for 50 years and stored in the Swiss Federal Archives [19].

The downfall of CS is having an impact on banking regulations in Switzerland. To avoid a repeat of this crisis, the author makes the following proposals:

- Giving more control/power to FINMA
- Taxing banks for financial transactions
- Separating investment banking from traditional banking
- Disinvesting from CS retail banking
- Requiring banks to be more transparent in their operations, including the payment of bonuses
- Making senior executives accountable for mismanagement
- Being more critical of credit rating agencies

Finally, the CS/UBS acquisition provides a complex case in negotiation and decision-making where third parties played a critical role particularly in changing legislation to protect national interests at the expense of bondholders. This case illustrates how negotiations can differ from theory and yet can lead to agreement. Furthermore, this case fits well in courses such as Corporate Social Responsibility, Business Ethics, Financial Management and Complex Business Negotiations involving the private sector and government agencies.

References

[1] C. McCabe, J. Mitchell, *Why Is Credit Suisse in Trouble? The Banking Turmoil Explained*. WSJ [online]. Available at: https://www.wsj.com/articles/why-is-credit-suisse-in-trouble-the-banking-turmoil-explained- 6f8ddb5b, 2023.

[2] Bloomberg.com, Credit Suisse Reels after Top Shareholder Rules Out Raising Stake [online]. Available at: https://www.bloomberg.com/news/articles/2023-03-15/credit-suisse-top-shareholder-rules-out-more-assistance-to-bank-lf9gfhbr#xj4y7vzkg [Accessed 14 May 2023], 2023.

[3] Credit Suisse: La FINMA aurait empéché le plan de Saudi Natinal Bank, Le Temps, 10 Juillet 2023.

[4] The Economist (March 23, 2023), From Silicon Valley to the Alps: A banking crisis spreads. Available from: https://www.economist.com/podcasts/2023/03/23/from-silicon-valley-to-the-alps-a-banking-crisis-spreads, 2023.

[5] Reuters, Credit Suisse scrambles to contain $10 billion Greensill aftershock, [online]. Available at: https://www.reuters.com/article/us-britain-greensill-credit-suisse-idUSKBN2B2163 [Accessed 14 May 2023], 2021.

[6] M. Cheney, 3 ed. La crise permanente. Lausanne, Switzerland. EPFL Press, 2015.

[7 How the Swiss 'trinity' forced UBS to save Credit Suisse FT March 2nd 2023

[8] P. Dummett, Cimilluca, Kowsmann (March 19, 2023). UBS Agrees to Buy Credit Suisse for More Than $3 Billion. The Wall Street Journal. Available from: https://www.wsj.com/amp/articles/ubs-offers-1-billion-to-take- over-credit-suisse-bfac51fa

[9] J. Kelly. UBS To Buy Beleaguered Credit Suisse to Avoid a Potential Financial Contagion—Large Layoffs Are Likely [online]. 19.3.2023 [cit. 2023-05-14]. Available from: https://www.forbes.com/sites/jackkelly/2023/03/19/ubs-buys-beleaguered-credit-suisse-to-avoid-a-potential- financial-contagion-large-layoffs-are-likely/?sh=4229e22979

[10] P. Bandino, J. Sturluson, J.P. Svoronos, The Banking Crisis in Iceland, Bank for International Settlements, Basel, Switzerland (2020)

[11] M. Watkins, (Breakthrough business negotiation. San Francisco, CA: Josey-Bass., 2022.

[12] J. H. Foerster, Switzerland Weighs Full or Partial Credit Suisse Nationalization [online]. 19.3.2023 [cit. 2023-05-14]. Available from: https://www.bloomberg.com/news/articles/2023-03-19/switzerland-weighs-full-or- partial-credit-suisse-nationalization#xj4y7vzkg

[13] L. Combalbert, M. Mery, Negotiator: The Reference for all Negotiations. Paris. Dunod, 2021.

[14] Tribune de Genéve, Le géant UBS poursuivra son chemin sans aide ni entrave. 12-13 Aout 2023.

[15] J. Revill, Sergio Ermotti returns as UBS CEO to steer Credit Suisse takeover. Reuters [online], [cit. 14.05.2023].: https://www.reuters.com/business/finance/ubs-names-sergio-ermotti-new-ceo-president-2023-03-29/, 2023.

[16] Bloomberg.com, Swiss Bank Watchdog Chief Resigns Citing High Stress, 2023.

[17] W. Ury, Getting past no: Negotiating your way from confrontation to cooperation. New York, NY: Bantam Book, 1991.

[18] C. Cellich, S. Jain, Practical solutions to global business negotiations. New York, NY. Business Expert Press, 2011.

[19] The Hindu business line, Credit Suisse inquiry will keep files secret for 50 years, 8728/23, 2023.

Information and communication technologies abuse

Krunoslav Antoliš

University of Applied Sciences in Criminal Investigation and Public Security,
Police academy "First Croatian Police Officer",
Ministry of Internal Affairs, Republic of Croatia, Zagreb, Croatia, kantolis@fkz.hr

Abstract

The paper provides an overview of the increasing importance of digital evidence in criminal investigations related to hate speech, extremism, and radicalism in the modern world. Law enforcement agencies face challenges of jurisdiction and encryption while dealing with evidence stored on global communication and cloud computing platforms. Various legal solutions, such as the CLOUD Act, the Australian Decryption Law, and GDPR, have been introduced to address these challenges. The paper also explores the historical context of extremism and radicalism, emphasizing the threat of violent extremism to the security of citizens. Hate speech is identified as a visible sign of individual radicalization, leading to discussions about freedom of speech and its restriction for the protection of certain groups. Different approaches to combating extremism are discussed, including those implemented in the USA, Russia, and the European Union. The research examines hate speech in the Croatian press and highlights the importance of addressing this issue. However, it points out the limited discussion on the restriction of freedom of speech for protecting against hate speech in the media. Overall, the paper presents a comprehensive analysis of the complexities and challenges involved in combating hate speech, extremism, and radicalism in the modern world.

Keywords: *Information and communication technologies, Hate Speech, Extremism, Radicalism, Freedom of Speech*

1. Introduction

In the modern world, evidence of crimes such as hate speech, extremism, radicalism is increasingly collected on the information and communication infrastructure through smartphones, gadgets, the Internet and the cloud. This is the main reason why digital evidence has become crucial in almost all criminal investigations of crimes such as hate speech, extremism, and radicalism. But this does not mean that collecting such evidence is simplified and that it is possible to obtain it legally without much effort. Law enforcement agencies are faced with, among other things, two major challenges in their investigations: jurisdiction and encryption.

ISSN 2991-9371

Effective criminal investigations often depend on whether the investigating state is authorized under its domestic law to obtain electronic data on telecommunications traffic (IP addresses from which the connection was established, duration of the connection, etc.) held by ISPs under its jurisdiction, including their cross-border subsidiaries.

The jurisdiction of national legal frameworks is limited to a specific national territory and our communication and use of data, due to the Internet, cloud computing and technological development, knows no national borders. The provider of cloud communication and computing platforms such as Skype, WhatsApp, Microsoft, Google and Dropbox will often store data in a country where the user does not reside, thereby denying the national legal system the ability to legally act without the consent of that other country where data about their citizens is stored.

Communication service providers who often have electronic evidence of certain criminal offenses of hate speech, extremism, radicalism, may have clients around the world and business offices and data storage facilities in many different countries. As a result, ISPs and controlled data may be subject to the laws of multiple states. Conflicting legal obligations may arise when, for example: an ISP receives an order from one government requiring disclosure, but other governments restrict disclosure of the same information, even though it may be vital to timely and effective criminal investigations.

Various approaches are approaches to solving these problems, so legislators have responded to these challenges in various ways. One is, for example, the introduction of new legal solutions, and examples of these solutions were: the Law on Clarification of Legitimate Rights to Use Data (CLOUD Act), the Australian Decryption Law, the Council of Europe Convention on Cybercrime, GDPR - which takes care of privacy on electronic infrastructures, as well as many others. The public often ignores the consequences and dilemmas that ISP service providers may face with criminal charges for non-compliance with the legal framework [1], as the penalties are high. For example, for non-compliance with the EU General Data Protection Regulation (GDPR) up to EUR 20,000,000 or 4% of the total annual worldwide turnover in the previous financial year.

All of the above points to the complexity of the information and communication infrastructure and the challenges faced by those who oppose hate speech, extremism, and radicalism in the modern world.

“Hate speech incites violence and intolerance. The devastating effect of hatred is sadly nothing new. However, its scale and impact are now amplified by new communications technologies. Hate speech – including online – has become one of the most common ways of spreading divisive rhetoric on a global scale, threatening peace around the world. The United Nations has a long history of mobilizing the world against hatred of all kinds to defend human rights and advance the rule of law. The impact of hate speech cuts across numerous UN areas of focus, from protecting human rights and preventing atrocities to sustaining peace, achieving gender equality and supporting children and youth. Because fighting hatred, discrimination, racism and inequality are among its core principles, the United Nations is working to confront hate speech at every turn. This mission is enshrined in the UN Charter, in international human rights frameworks and in global efforts to achieve the Sustainable Development Goals [2]”.

If we use the Cambridge dictionary, we will see that hate speech is defined in it: public speech that expresses hate or encourages violence towards a person or group based on something such as race, religion, sex, or sexual orientation (= the fact of being gay, etc.) [3]. Of course, even from the point of view of the definition of hate speech, radicalism and extremism, there are differences for various reasons. For example, former British Prime Minister T. Blair says: "Radicalism and extremism as the basis of terrorism have been proven many times in history, so no one should doubt it."... "It is not just about isolated pockets of extremism. It is an ideology with a movement and a narrative. Know that we are far from getting out of this." [4].

"Violent extremism represents a major threat to the security of EU citizens. The terrorist threat has partly shifted from organized groups to individuals, who are harder to detect and whose actions are harder to predict. Much can be learned from experts in practice and their recommendations provide important tools and concrete proposals to policy makers", said EU Commissioner Cecilia Malmström [5].

One of the visible signs of the radicalization of individuals is hate speech, which over time has become one of the topics of media discussion. In the spirit of the words of Martin Luther King Jr., who is credited with the quote "In the end, we will not remember the words of our enemies but the silence of our friends" [6]. In the last ten years, hate speech has started to be discussed, and this topic is increasingly present in our media.

The answer to what actually constitutes hate speech is not easy to find, and therefore it is mostly legally limited to public incitement to violence against defined groups. On the other hand, following the media discussion on hate speech and freedom of speech implies public opinion on the issue, as well as putting into context the issue of radicalization and extremism [7]. One of the arguments for the restriction of hate speech, and for the purpose of protection against hate speech, as well as extremism and radicalism, is also a moral one, in the words of Cram (2019) "Speech that calls on citizens to violate laws passed by freely elected representatives would instinctively seem undeserving of constitutional protection"[8].

To this end, in this paper we will provide the historical context of the debate on extremism and radicalism, its implications, explore how the US and the Russian Federation have legally limited the debate on it, and consider legal actions regarding security in the EU. We will also show how much is being discussed about hate speech and freedom of speech in the Croatian press, and with this research we will show the opinion of the press on the restriction of the right to speech with the aim of protecting certain groups, but also in a wider context, protection against extremism and radicalization.

2. Historical context

But let's look at the definitions of these terms and their meanings in the context of history. These are some of the definitions that can be found on the Internet, where I would like to underline the attributes - a drastic and revolutionary change.

Definition of radicalism: "Adhering to or following principles advocating drastic political, economic or social reforms" (*Dictionary by farlex,*)[9], "Political orientation of those who favour revolutionary changes in government and society" (*E.net*) [10].

However, considering the term radicalism in the historical context, we could say that there is a connection with the word liberalism. Namely: "In some countries, the radical tendency is a variant of liberalism. Sometimes it is less doctrinal and more moderate, sometimes more extreme. In the Victorian era, the Radicals were part of the Liberal coalition, but often rebelled when the more traditional Whigs in that coalition resisted democratic reforms. In other countries, these left-liberals founded their own radical parties with different names, e.g. in Switzerland and Germany (Freisinn), Bulgaria, Denmark, Italy, Spain and the Netherlands, but also in Argentina, Chile and Paraguay. This does not mean that all radical parties were formed by left liberals. In French political literature, it is normal to make a clear distinction between liberalism and radicalism.

In the mentioned concept, the term radicalism is often associated and even identified with the term extremism. The terms extremism or extremist are almost always ergonomic - that is, they are applied by others to a group, not to the group that designates them. There is no political party that calls itself "right-wing extremists" or "left-wing extremists," nor is there a sect of any religion that calls itself "extremist" or that calls its doctrine "extremism." The act of labelling a person, group or act as extremist is sometimes claimed as a way to achieve a political goal - especially by: governments seeking to defend the status quo or political centrists.

The term extremist is often used to refer to those who use or advocate violence against the will of society as a whole, but it is also used by some to describe those who advocate or use violence to impose the will of a social body, such as a government or majority constituency. Those described as extremists would generally not accept that what they practice or advocate constitutes violence, but would instead speak in terms of acts of "resistance" or militant action or the use of force. The word violence cannot be considered value neutral. Ideology and methodology often become inextricably linked under the single term extremism.

All of the aforementioned forms of unacceptable behaviour, especially radicalism, seem to be best associated with terrorism in the NYPD's 2008 paper, Radicalization in the West: A Domestic Threat).

Jihadist or Jihadist-Salafi ideology is the driving force that motivates young men and women, born or living in the West, to carry out "autonomous jihad" through terrorist acts against host countries. It guides movements, identifies problems, encourages employment and is the basis for action. This ideology inspired a number of domestic groups, including the Madrid bombers of March 2004, the Amsterdam Hofstad Group, the London bombers of July 2005, the Australians arrested as part of Operation Pendennis in late 2005, and the Toronto 18 arrested in June 2006.

The process of radicalization is observed through several stages: Pre-radicalization, Self-identification, Indoctrination, Jihadization [11]. Each of these stages is unique and has special signatures. Not all individuals who start this process necessarily go through all the stages. Many stop or abandon this process at various points. Although this model is a sequence, individuals do not always follow a perfectly linear progression. Individuals who go through this entire process are very likely to be involved in the planning or execution of a terrorist act.

3. Various implications

The global jihadi-Salafi movement poses a significant challenge to law enforcement and intelligence because the phenomenon of radicalization that drives it is spontaneous, indiscriminate, and its indicators are subtle[12]. It is difficult to detect whether a person is radicalized, especially in the early stages.

Individuals are often not on the law enforcement radar. Most have never been arrested or involved in any legal problems. Apart from some common characteristics in age and religion, individuals who undergo radicalization appear as "ordinary" citizens, who look, act, speak and walk like everyone around them. In the early stages of their radicalization, these individuals rarely travel, do not participate in any militant activities, but nevertheless slowly build opinion, intent and commitment to carry out jihad.

As evidenced in numerous case studies, these groups or groups of extremists: They act autonomously, can be quickly radicalized and are often made up of individuals who at first glance appear to be well integrated into society. They are not "brand name" terrorists or part of any known terrorist group. They generally have little or no connection to known militant groups or actors. Rather, they are like-minded people who spend time together in groups originally organized by previously established social network connections. They are not crime syndicates and therefore the application of organized crime strategies will not succeed.

Thoughts highlighted in Special Report [13]: Why the Al-Qaeda Youth Joint Association is also very interesting: "Creating a new dialogue with the Muslim community, one that fosters positive relations and erodes al-Qaeda's appeal, requires the United States to reject myths that extremism is somehow caused by religion, poverty or insanity. Instead, U.S. policies and programs must focus on understanding the depth of personal needs and the distinctive nature of adolescent development that make al-Qaeda's message resonate with young men. "

It is a public opinion that the efforts of the Catholic Church and the Pope, whose statements have encouraged the peaceful resolution of some disagreements with Muslims and the need for dialogue with them, are of great importance in establishing a better and safer society. Pope in Germany calls for respect between Christians and Islam BERLIN, September 23, 2021 Pope Benedict XVI on Friday called on Islam and Christianity to establish a relationship based on "dialogue and mutual respect", adding that the two faiths could enjoy "fruitful cooperation". "For our actions to be effective, we must grow in dialogue and mutual respect"[14]. What is evident, if we take into account issues dealing with extremism, radicalism, terrorism, is the fact that there is no single formula that would unite all forces in the fight against extremism. In this sense, I would like to mention several significant examples.

4. Approach of the USA

The threat posed by violent extremism, however, is not limited by international borders nor is it confined to any single ideology. Groups and individuals inspired by a range of religious, political or other ideological beliefs promote and use violence.

The increasingly sophisticated use of the Internet, mainstream and social media, and information technology by violent extremists adds an additional layer of complexity.

To counter violent extremism (CVE), the Department of Homeland Security (DHS) works with a wide range of partners to gain a better understanding of the behaviours, tactics, and other indicators that could indicate potential terrorist activity in the United States, and the best ways to mitigate or preventing that activity.

The DHS approach to CVE emphasizes the strength of local communities. It begins with the premise that well-informed and equipped families, communities and local institutions are the best defence against terrorist ideologies. The primary purpose is to prevent a terrorist and violent extremist attack by an individual or group recruited by a violent extremist organization, or inspired by an extremist ideology, and strong and resilient communities are also supported as important in their own right.

4.1. Key goals of the USA

1. Support and coordinate efforts to better understand the phenomenon of violent extremism, including assessing the threat it poses to the nation as a whole and within specific communities, strengthening intelligence analysis, sponsoring research through the DHS Science and Technology Administration (S&T), developing an improved understanding of CVE through discussions and coordination with international partners.

2. Encourage efforts to accelerate and support community-based nongovernmental programs and strengthen relationships with communities at risk of attack by violent extremists, expand DHS community efforts, support interagency efforts to expand engagement, help build strong and resilient communities.

3. Disrupt and deter the recruitment or mobilization of individuals by supporting local law enforcement programs, including information-based, community-based policing efforts that have proven effective for decades in preventing violent crime. Expanding support for local, community-based, information-driven efforts to implement the recommendations of the DHS Homeland Security Advisory Council. CVE Task Force, helping to facilitate trust relationships among local communities, law enforcement, and state and local fusion centres through DHS Building Communities of Trust (BCOT) conferences and workshops on CVE: Training initiatives: In addition, DHS is a priority gave preventive activities through Grants for the 2021 financial year.

Empowering local partners to prevent violent extremism in the US, a community-based approach goal and priority action areas.

1. Improving federal engagement and support for local communities that may be targeted by violent extremists,

2. Building government expertise and law enforcement to prevent violent extremism,

3. Suppression of violent extremist propaganda while promoting our ideals.

4.2 Guiding Principles of the USA

"The US must continually improve its understanding of the threat posed by violent extremism and the ways in which individuals or groups seek to radicalize Americans, adjusting our approach as necessary."

"The US must do everything in its power to protect the American people from violent extremism while protecting the civil rights and civil liberties of every American."

"The US must build partnerships and support communities based on mutual trust, respect and understanding."

"The US must employ a wide range of good governance programs - including those that promote immigrant integration and civic engagement, protect civil rights and provide social services - that can prevent radicalization that leads to violence."

"The US must support local capabilities and programs to address issues of national interest.

"Government officials and the American public should not stigmatize or blame communities because of the actions of a handful of individuals."

"Strong religious beliefs should never be confused with violent extremism".

"While the US will not tolerate illegal activity, opposition to government policy is neither illegal nor unpatriotic and does not make one a violent extremist"[13].

5. Russian Federation

The then President of the Russian Federation, Dmitri Medvedev, signed a decree ordering the creation of an interdepartmental government commission to combat extremist activities in the country [15].

The committee, which will include the heads of 16 government agencies, is charged with proposing anti-extremism policies, developing relevant concepts and strategies, evaluating current activities, reviewing measures taken and adopted laws, and preparing annual reports for the president.

(Decree of the President of the Russian Federation No. 988 of July 29, 2021 on the Interdepartmental Commission for Combating Extremism in Russia [in Russian], website of the President of the Russian Federation [official publication].)

Dmitry Medvedev signed the Executive Order on the Interdepartmental Commission for Combating Extremism in the Russian Federation

The Executive Order of the President approved the Provisions on the Interdepartmental Commission for Suppression of Extremism in the Russian Federation and its composition, and it was established that the Minister of Internal Affairs will chair it.

The interdepartmental commission for combating extremism in the Russian Federation was

established with the aim of ensuring the implementation of state policy in the fight against extremism, coordinating the activities of federal executive bodies and executive bodies of federal constituent bodies of Russia, and providing organizational and methodological guidelines for these purposes.

6. Internal security of the EU

"The EU firmly believes in eradicating terrorism at its source. Therefore, preventing terrorist attacks by addressing and stopping terrorist radicalization and recruitment is an EU priority, as stated in the EU Internal Security Strategy in action" [16]. In this paper, we decided to answer some of the above questions and defined the following research problems:

1) To what extent do the print media talk about the problem of hate speech?

2) To what extent does the press participate in the debate on freedom of speech in the context of hate speech?

3) To what extent do the press convey the advocacy of restricting freedom of speech in order to protect certain groups from hate speech?

For research purposes, we used the database of Presscut d.o.o. which contains media announcements from Croatia. In order to avoid differences in media coverage, we decided to conduct the research on the content of the press and that in the period from 1.1.2020. until 31.12.2020. years. The database stores all printed materials that are published in Croatia and that have a circulation of more than 3,000 copies.

In order for the printed matter to be stored in the database, it must first be scanned, then the scanned document must be zoned, i.e. zones must be assigned to it on each individual page in order to graphically determine where a particular article is located on the page, divided into supertitles. title, subtitle, post content, inset and photos. Once the newspaper is scanned and zoned, it goes through OCR processing. OCR is an abbreviation for optical character recognition, which translated from English means optical recognition of characters, and practically it means that it converts an image of a text into a searchable text.

The analytical matrix consisted of the following content units: Hate Speech Memorial - yes/no; Freedom of speech memorial yes/no; restriction of freedom of speech in favor of protecting certain groups from hate speech for/against.

7. Croatian media

In order to get a picture of the situation regarding hate speech in Croatia, it is first necessary to point to explicit indicators, for example, the number of publications in the press in 2020 amounted to 446,411 publications from 330 newspapers, of which 981 from 69 newspapers were related to hate speech, and all text data, as well as a scan of each individual article and other metadata (such as the publication date of the newspaper, the date of processing of the newspaper, ...), are stored in the database under a unique code of the article.

For the purposes of this research, a corpus of 446,411 publications stored in the press database in 2020 was searched. The search was made using the software program Classifier, which, with the help of keywords and machine learning, classifies posts into the desired topics.

The research was conducted through content analysis.

The five strategic goals are: disrupt international criminal networks that threaten our societies, prevent terrorism and solve the issue of radicalization and recruitment, raise the level of security of citizens and companies in cyberspace, strengthen security through border management, increase Europe's resilience to crises and disasters.

In this sense, radicalization is understood as a complex phenomenon of acceptance of a radical ideology that could lead to the commission of terrorist acts.

Since 2005, work in this field has been guided by the EU Strategy for Combating Radicalization. Recognizing the powers of EU states as security providers, the strategy contains common standards and measures aimed at preventing radicalization and terrorist recruitment, grouped under three key headings: disrupting the activities of individuals and networks that draw people into terrorism to ensure that mainstream voices opinions prevail over those of extremism that more strongly promote security, justice, democracy and opportunities for all.

However, those trends were not a direct and explicit reason for the introduction of new terms for criminal acts that would be defined as extremism or radicalism. In general, in Europe, and especially in Southeast Europe, criminal legislation focuses on hate crimes and various forms of discrimination. Accordingly, various governmental and non-governmental organizations have been established in Europe, which deal with the mentioned problems in an organized manner.

An example of this is the call to action for civil society organizations fighting hate crimes in Europe [17]. Every day, hundreds of organizations in Europe work to increase awareness of hate crimes through monitoring activities, producing statistical data, publishing reports and providing support to victims.

Despite the strong commitment of the aforementioned organizations to their work, several difficulties continue to prevent the implementation of their work: the low level of attention shown by governments and local authorities in this matter and the existing lack of comparable data.

In order to improve the work of civil society organizations and challenge governments and institutions to implement anti-discrimination measures, the face-to-face method aims to standardize the criteria for collecting data on hate crimes.

As an objective indicator of the occurrence of hate speech, the number of reports for the criminal offense of incitement to violence and hatred under Article 325 of the Criminal Code in Croatia was used, which in 2020 was 83, in contrast to 2019, when there were 59 [18].

The ratio of reported hate speech to announcements about hate speech is almost 12:1 (11.82), from that data we can conclude that the problem of hate speech was really discussed in the press. Whether that ratio is sufficient is open to debate, but if we take into account the specificity of 2020 and the absolute dominance of announcements related to the corona virus in all media, including the press, we can conclude that it is not inappropriate.

The diversity of the number of posts by month tells us that the topic of hate speech is actualized by reasons from the external environment and that it is not constantly present as a topic of intrinsic interest to journalists.

The medium to long form of articles that mention hate speech tells us that when writing about that problem, the circumstances or attitudes should be explained, and that simple news is generally not enough to post about the problem.

Considering that in only 3% of posts hate speech is mentioned with freedom of speech, it is insinuated that there is almost no discussion about this issue. Although within those posts there is a significant number of posts that oppose the restriction of freedom of speech for the purpose of protection against hate speech, but expressed as a percentage, it is only 1% of the number of posts about hate speech.

Taking all of the above into account, we can conclude that the Croatian press considers the topic of hate speech to be relevant, but they do not consider the discussion on limiting the right to freedom of speech for the purpose of protecting against hate speech relevant, as well as the position against this restriction, which, although present, is not sufficient to indicated the quantitative relevance of such an attitude in the print media [19, 20].

8. Conclusion

The modern world faces significant challenges in combating hate speech, extremism, and radicalism, which are increasingly prevalent on digital platforms. The use of smartphones, gadgets, the Internet, and the cloud has made digital evidence crucial in criminal investigations related to these offenses. However, collecting such evidence is complex due to jurisdictional issues and encryption challenges.

Jurisdictional limitations arise when communication service providers store data in different countries, making it difficult for national legal systems to act legally. Conflicting legal obligations may arise when multiple governments demand data disclosure, leading to delays in investigations. To address these challenges, various legal solutions have been introduced worldwide, such as the CLOUD Act, the Australian Decryption Law, and the GDPR.

The definitions of hate speech, extremism, and radicalism differ, making their identification and prevention complicated. Hate speech has gained increased attention in the media over the last decade, with public discussions focusing on freedom of speech and the moral aspects of protecting certain groups from hate speech.

In response to the growing threats, various countries have adopted their approaches to tackle extremism. The USA emphasizes community-based efforts to prevent terrorist radicalization and recruitment, while the Russian Federation established an interdepartmental commission to combat extremism. The EU focuses on disrupting terrorist networks, preventing terrorism and radicalization, strengthening cybersecurity, managing borders, and enhancing resilience to crises.

In Croatia, the press actively discusses hate speech, especially in the context of the COVID-19 pandemic. However, discussions on limiting freedom of speech for the purpose of protecting against hate speech are relatively scarce in the media [6]. The lack of consensus on this issue

may hinder progress in addressing hate speech effectively.

The fight against hate speech, extremism, and radicalism requires a comprehensive and multi-faceted approach involving legal frameworks, international cooperation, community engagement, and media awareness. By addressing these challenges together, societies can work towards promoting tolerance, inclusivity, and safety for all individuals.

References

[1] Framework Decision 2008/913/PUP. (6. 12 2008). Retrieved from eur-lex.europa.eu: https://eur-lex.europa.eu/legal-content/HR/TXT/HTML/?uri=LEGISSUM:l33178&from=EN

[2] Universal declaration of human rights. (10. 12 1948). Retrieved from un.org: https://www.un.org/en/about-us/universal-declaration-of-human-rights

[3] https://dictionary.cambridge.org/dictionary/english/hate-speech retrieved 3/9/2021.

[4] http://www.tonyblairoffice.org/news/entry/ten-years-after-9-11-the-battle-is-for-an-open-world-not-a-closed-one/ retrieved 09/10/2021.

[5] http://ec.europa.eu/commission_2010-2014/malmstrom/news/archives/2023/01/20230128_en.htm retrieved 29.01.2023.

[6] M. Poljak; J. Hadžić; M. Martinić. (2020). Hate speech in the Croatian media space. In medias res: journal of media philosophy, Vol. 9 No. 17, 2709-2744.

[7] V. Munivrana, Maja; A. Marton. (2016). Where do the boundaries of freedom of expression end and hate speech begin? Analysis of Croatian legislation and practice in the light of European legal standards. Croatian Yearbook for Criminal Sciences and Practice (Zagreb) vol.23, number 2, 435-467.

[8] Constitution of the Republic of Croatia NN 56/90, 135/97, 08/98, 113/00, 124/00, 28/01, 41/01, 55/01, 76/10, 85/10, 05/14. (11. 12 2022). Retrieved from Zakon.hr: https://www.zakon.hr/z/94/Ustav-Republike-Hrvatske

[9] http://www.thefreedictionary.com/radicalism retrieved 09/19/2022.

[10] http://dictionary.die.net/radicalism retrieved 09/19/2022.

[11] M.D. Silber; A.Bhatt: Radicalization in the West: The Homegrown Threat NCJ Number 238848 2007, https://www.ojp.gov/ncjrs/virtual-library/abstracts/radicalization-west-homegrown-threat

[12] http://www.nypdshield.org/public/SiteFiles/documents/NYPD_Report-Radicalization_in_the_West.pdf retrieved 11/21/2022.

[13] http://www.whitehouse.gov/sites/default/files/empowering_local_partners.pdf retrieved 09/10/2021.

[14] http://www.mysinchew.com/node/64152 retrieved 09/24/2021.

[15] http://www.loc.gov/lawweb/servlet/lloc_news?disp3_2777_text retrieved 08/20/2021.

[16] http://ec.europa.eu/home-affairs/policies/terrorism/terrorism_radicalisation_en.htm retrieved 09/10/2022.

[17] www.huridocs.org/2021/09/call-to-action-for-civil-society-organisations-working-against-hate-crime-in-europe retrieved 10.01.2022.

[18] Criminal Code, consolidated text of the law NN 125/11, 144/12, 56/15, 61/15, 101/17, 118/18, 126/19, 84/21. (31. 07 2021). Retrieved from zskon.hr: https://www.zakon.hr/z/98/Kazneni-zakon

[19] Law on Electronic Media, consolidated text of Law NN 153/09, 84/11, 94/13, 136/13. (30. 6 2023)

[20] Law on Media Official Gazette 59/04, 84/11, 81/13. (7. 6 2023). Retrieved from zakon.hr: https://www.zakon.hr/z/38/Zakon-o-medijima

Determining street light type with computer vision

Luka Medvidović[1,2]

[1]Zagrebačka škola Ekonomije i Managementa, Zagreb, Hrvatska, lmedvido@zsem.hr
[2]Fakultet Elektrotehnike i Računarstva. Zagreb, Hrvatska, lm51184@fer.hr

Abstract:

In the realm of engineering education, students often rely on expensive tools for practical learning, creating barriers to accessible research. This paper introduces a pioneering solution developed at the Faculty of Electrical Engineering and Computing that addresses this gap: a method for street light classification using everyday smartphones. By deliberately shaking the phone and reducing the aperture, we prevent sensor saturation, enabling accurate color representation of light sources. This offers a cost-effective tool for students and educators to engage with real-world light pollution analysis, a pressing issue underscored by numerous EU funding initiatives. The technique not only promises advancements in urban lighting efficiency and energy conservation but also exemplifies the potential of blending academic rigor with pragmatic affordability in engineering education.

Keywords: *Street Light Classification, Computer Vision, Light Pollution Analysis, Spectral Power Distribution, Flicker Frequency Analysis, Affordable Urban Planning Tools.*

ISSN 2991-9371

Index

ISSN 2991-9371

Organizer

ZSEM Zagreb School of Economics and Management

LSB Luxembourg School of Business

Co-organizer

ZSEM POSLOVNA AKADEMIJA

Sponsors

AACSB Business Education. Connected.

PODUZETNIK

NETOKRACIJA

ISSN 2991-9371