
Welcome

This year's third English-language issue reflects the trend-like change in educational research dealing with the world of work. In our **Studies** section, timely research topics appear, the latest research results of which are based on empirical studies. It is reflected in the periodical's first study, Judit Módné Takács, Nikolett Tolner, and Monika Pogátsnik's "*University Teachers' Perceptions of AI integration: Insights from a qualitative focus group study*", showing that one of the central elements of scientific thinking these days is the issue of artificial intelligence. Tamás Kersánszki's article, which deals with the recently particularly topical topic of "*Workplace Learning during the COVID-19 epidemic and digital transition*", fits this thematic space and time. The editorial the intention was logically linked to Kinga Mandel's "*The Homeschoolers inclusion in Higher education. Szekler's case study*", which analyzes the processes related to the change in activity centers that appear the same way in the world of work and study. Helena Manojlovich illustrates the technical application of new approaches to education in her article "*Escape Rooms and Collaborative Problem-Solving: Examining the Competence of Teacher Candidates*", which examines the problematic of the pedagogical application of the activity that has become popular in the form of creative entertainment from a practical point of view. Finally, the article of this block that uses modern analysis methods is the study "*Investigation of Engagement and Performance among female and male students in technical higher education*" by Dávid Dobák and Brigitta Szilágyi.

Looking at the writings appearing in our **Consciousness** section, problem posing, conceptual questions and complex analysis are more characteristic. These analyzes dealing with the preparation of research and the review of theoretical sources were prepared with the intention of preparing new research, and their publication attempts to explain the connections by illustrating the name of the column. The study "*Career Socialization and Professional Identity*" by Nóra Hegyesi-Halmos can be considered as such, which analyzes a scientific connection that can also be considered a fundamental question based on a rich literature analysis. Thu Thu Htike's article "*Quality Education for Students in Internally Displace People (IDP) Camps Myanmar*" is of similar general importance if we look at the impact of today's conflicts on education despite the geographical distance. The education and professional socialization of refugee youth has increasingly become a global problem, with which science must also deal with the analysis of local practices and solutions, indicating how dramatic situations could be handled more effectively than at present.

The closing block of the current issue is also international in terms of authors. The first paper, Dénes Zarka's project description deals with the issue of the introduction of micro-credits, which can even be considered a new challenge in our digital environment from the point of view of the fit between the

worlds of education and work. With the process in which the demand for supplementing and renewing our professional knowledge is increasing nowadays. The author presents a project-based examination of the innovative solutions used in this process. Afterwards, *Alfred Holzbrecher* and *Patrick Blumschein*, professors of the EU-funded Jean Monnet Chair Freiburg for European Education (JMC-FrEE) at the University of Education in Freiburg (Pädagogische Hochschule Freiburg) "*Teaching and learning in a globalized classroom - a concept for university didactics.*" project. Finally, our issue ends with *Thomas Sork's* article, which reports on the news of the 2023 induction ceremony of the International Adult and Continuing Education Hall of Fame (IACEHOF).

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University teachers' perceptions of AI integration: Insights from a qualitative focus group study

Introduction and literature review

Artificial intelligence is revolutionizing people's daily lives by providing practical solutions to their problems and making their lives more comfortable. It contributes to a sustainable lifestyle by enabling the automation and intelligent control of household appliances and even optimizing energy consumption based on individual habits (Mandić, 2022). AI is crucial in many areas of life, such as healthcare, analyzing large amounts of data and recognizing patterns in diagnosis and treatment (Meskó & Görög, 2020). In the transport sector, AI will revolutionize road safety and reduce accidents through automated vehicles and intelligent transport systems (Németh, 2021). The list of areas where it is providing new innovative solutions to meet human needs is endless.

Artificial intelligence offers practical solutions, promotes a more comfortable way of life, and contributes to a sustainable way of life (Poola, 2017). The revolution in AI is not only impacting everyday life but is also having a significant impact on educating industrial and technical professionals. The spread of AI-enabled technologies in the industry is creating new challenges in the training of IT professionals who must learn to design and operate AI-enabled systems and understand AI's ethical and social challenges. As AI evolves rapidly, the workforce needs continuous training to keep up with new technologies and applications (Jungmann et al., 2020). Integrating AI into all aspects of life also means that today's workers and professionals need new skills and competencies to use AI to solve various problems and to innovate effectively. It makes education especially important to manage and exploit the technological changes behind AI.

Industrial workforce transformed by artificial intelligence

Big data and artificial intelligence are critical to the competitive growth of the industry, as companies are adopting these technologies at a rapid pace. In artificial intelligence, labor market needs still need to be met by those trained in vocational and higher education. (Johnson et al., 2021) The development and optimization of manufacturing processes are closely linked to the data-driven culture and the industrial artificial intelligence (AI) ecosystem. Data-driven culture means companies regularly collect and analyze data during production processes and make decisions and improvements based on them. The AI ecosystem involves integrating AI technologies, algorithms, and systems into production processes. A proper symbiotic interaction between humans and AI remains to be discovered, although workers and engineers play a crucial role in industrial AI applications. Although human involvement is essential, artificial intelligence is essentially the player in the process, with humans making the decisions. Parties need to understand AI-driven decisions better so that they can accept and trust them in the future. (Peres et al., 2020)

This process has a significant impact on the training of the workforce. Employees will need to acquire new skills and knowledge to implement AI. Understanding how AI technologies work, how to use data to optimize processes effectively, and how to manage AI-based systems is essential for those who work there. Employees can perform their jobs more effectively and efficiently by understanding and learning how to use AI technologies. The result can be an increase in work efficiency and productivity. At the same time, workers will need to be flexible and adaptable and continually educate themselves in new technologies and processes to meet the new challenges and opportunities that the application of AI brings.

Artificial Intelligence and Education: challenges and opportunities

Slowly, almost imperceptibly, AI has crept into almost every area of human life over the past few decades. AI-based technologies aim to enable machines and computers to perform tasks that used to require human intelligence. The application of AI is already impacting our daily lives and could bring

even more significant changes in the years to come. Advances in AI are revolutionizing education by facilitating the transfer of knowledge and the optimization of training. Learning will become more motivating, enjoyable, and effective through interactive digital content and e-learning frameworks (Lin et al., 2021). Appropriate use of AI opens hidden opportunities for development (Huang et al., 2023).

Applying AI has also shown great educational potential (Ady & Terpecz, 2018). Ahmad et al. (2022) found that most of the work related to MOOCs (massive open online courses) is done using AI/machine learning (23%), big data (20%), and gamified technologies (17%). Therefore, AI can be widely used in education (Chen et al., 2020), and it can help teachers create teaching materials assessments or even evaluate students. Alongside these benefits, there are many challenges to applying AI to education (Dietz, 2020). The teacher's role changes, data protection, personal identification, and cyber protection issues arise (Alghamdi & Ragab, 2022). Nevertheless, AI is expected to play an increasing role in education (Dimitriadou & Lanitis, 2023), and its use in education offers promising opportunities for students and educators (Kasneci et al., 2023). AI technologies can optimize educational processes. They can provide support and tools for teachers and students. It can also contribute to more efficient education and create opportunities for all students' successful learning and development.

Perhaps more attention has been paid to AI-based systems because of the widespread appearance of ChatGPT. ChatGPT is a significant language model chatbot, an AI-based system that can provide realistic and intelligent answers to user questions. In the free version (3.5), the program can generate content on subjects with little information. ChatGPT hallucination is often used to describe this phenomenon. It is essential that everybody treats the replies of the chatbot carefully and check the information given. (Deng & Lin, 2023)

AI can provide significant support to educators in various aspects of education, such as the development of curricula, research materials, sets of tasks, and the automated scoring of exams. AI will not replace teachers, but it can help them. The study focuses on the use of AI in education, looking at AI-based systems that can help teachers create teaching materials, prepare assignments, and administer exams. The research used a focus group discussion to explore participants' awareness of and experience with AI-based applications. The discussion aimed to pave the way for innovative ideas and solutions by mapping educators' opinions, attitudes, and knowledge about the use of artificial intelligence in higher education.

The purpose of the research, research questions, and research method

Our research examined the role of artificial intelligence (AI) in education. Based on the participants' experiences, we examined the possibilities of the use of AI in support of the work of educators. We analyzed in detail the help of AI in preparing teaching materials, i.e., the creation of questions based on different aspects. In addition, we investigated the use of AI in the supervision of students during the exam, for example, in identifying candidates. Our particular focus was on the potential of AI in the exam assessment, including automated scoring and the preparation of text assessments. Our research looked at what types of tasks AI could effectively assess during the exam and what types of exams would be ideal for using AI. There has also been research into how teachers can be effectively prepared for using AI in the classroom.

This study uses empirical, qualitative research methods to conduct focus group interviews with engineering teachers at the University of Obuda. The focus group discussions were used to map the lecturers' knowledge, attitudes, and opinions regarding Artificial Intelligence methodologies and explore in detail the possibilities of using AI in the teaching process. During the conversation, we collected responses using a specific set of questions, which we transcribed. The content of the conversations was subjected to a structured analysis, a thematic analysis, and an interpretive analysis, and then a narrative analysis of the text was carried out.

Participants in the study

During the research, we asked 12 educators to participate in the focus group discussion to investigate their knowledge of artificial intelligence-based systems. The interview was conducted online using the TEAMS application. The teachers were divided into four groups during the research. Those who regularly use AI and know its benefits and limitations were the largest group. A quarter of the respondents were teachers aware of the possibilities of using AI but still needed to gain experience with it. The group with a participation rate of a quarter included those members of the respondents who had heard about AI but who needed to be made aware of the advantages and limitations of AI. Those who had never heard of AI and were unaware of its applications formed the smallest group. From that, only 17% of the group surveyed had not heard of AI. This classification helped to understand teachers' different preparation levels and attitudes to AI, which may be necessary for developing educational processes and more effective use of AI.

Introduction of research results

This analysis provides insight into how artificial intelligence technologies could impact online and face-to-face assignments, exam preparation, and delivery. The interview results allow us to gain insight into the advantages and disadvantages of using the technology from a teacher's perspective of effective user-friendliness.

Narrative analysis: In-depth study and interpretation of textual data

The transcript of the corpus analyzed in this study consisted of 8220 words, of which 2223 unique words could be identified, reflecting the diversity and richness of the vocabulary used. The density of vocabulary, which indicates vocabulary richness, was found to be 0.270, indicating a moderate level of word diversity in the text. The value of the readability index, which measures the complexity of the text, is 14.473. It indicates a moderate level of complexity. Moreover, the average number of words per sentence is 24.0, indicating sentence length and syntactic structure. The most frequently used words and phrases in the conversation are shown in the word cloud in Figure 1.

Figure 1 Words and phrases most frequently used during focus group discussion



(Edited by the authors)

The high frequency of the terms "artificial" and "intelligence" (n=41) indicates that they are mentioned in the text due to the interview context. The respondents' positive attitude towards using and applying artificial intelligence is indicated by the relatively high frequency of the term "good" (n=23). A possible relationship between the two concepts is indicated by the equal frequency of "ChatGPT" and "exam" (n=22), which suggests that they have a similar meaning and presence in the analyzed text. A deeper analysis of the text shows that, in many cases, the expressions aim to prepare for the exam, prepare the students, and support the teachers. The term "methods" (n=11) indicates that the text discusses different approaches, techniques, or methodologies related to the topic. The term "help" (n=8) indicates that the text deals with helping or supporting using artificial intelligence methods.

Significant relationships between specific terms in the dataset were found in the correlation analysis. The word "opportunities" shows a strong positive correlation with the term "teachers" (correlation

coefficient: 0.906, p-value: 0.001), indicating a close relationship between these concepts. The interview revealed the number of contact points between teachers and using artificial intelligence devices in the classroom. Such valuable points could be preparing course materials, textual annotation of course materials, generating exam questions and answers, preparing exams, generating tasks, automating exams, and correcting. Similarly, the term "method" has a strong positive correlation with the term "exam" (correlation coefficient: 0.821, p-value: 0.003), suggesting a close relationship between the two. In the analysis of the text, this relationship indicates which methods are used in exams in higher education.

Furthermore, the term "chatgpt" shows a moderately strong positive correlation with both "advantage" (correlation coefficient: 0.758, p-value: 0.011) and "help" (correlation coefficient: 0.701, p-value: 0.024), indicating the relationship between the advantages of ChatGPT as a featured AI application and help. This application was the most frequently mentioned due to its familiarity, so in many cases, the focus of the responses was on the use and possibilities of this application. The observed correlations are statistically significant, given the low p-values associated with these correlations. These results suggest that the possibilities and the teachers are closely related, that the methods used to analyze the responses are related explicitly to the exams, and that using ChatGPT benefits and helps the teachers in their work.

We also used various textual analysis methods to identify patterns and relationships that enhance overall content understanding. For example, word frequency analysis was used to identify and quantify the occurrence of certain words in the corpus. We could highlight the prominent role and the importance of certain expressions in the text. Word composition analysis was also used to look at co-occurrence patterns, revealing relationships and associations between words.

Knowledge of and attitudes toward AI methods among teachers

During the study, teachers were asked when they first encountered AI, and their responses allowed us to identify the pre- and post-ChatGPT timeframes. Before ChatGPT appeared, the teachers who teach on this topic (3 people) and four teachers stated they were interested in using artificial intelligence. Three teachers are interested in this subject but have yet to gain experience. 2 participants stated that they were practically aware of artificial intelligence for the first time. It had not concerned them until now.

In response to whether AI-based applications could replace teachers, all respondents agreed they had no concerns. Although not all respondents were very vocal, it was clear that most were optimistic about the issue, focusing on the benefits rather than the drawbacks.

Effective use of AI in assessment

AI can significantly assist teachers in the examination process, helping with exam preparation (e.g., generating questions based on given criteria), monitoring exams (e.g., verifying student identity), and evaluating exams (e.g., automatic scoring and text evaluation). Several attendees commented that they would find it helpful to be assisted by an AI-based application when composing their questions. None would like to entrust the exam supervision to an AI-based application. Most teachers say that verbal feedback is still an excellent way to discourage cheating and is effective in small groups. Group members were divided on the possibility of using ChatGPT during the assessment. Some emphasized its benefits and its conscious use. Others had a strongly negative view of it and wanted to restrict its use during exams.

Even though the participants had yet to use the AI-based tools during the examination or in preparation, there was a sense of urgency about the use of the AI-based tools. Several people mentioned that if they were more familiar with these applications, they would use them not only in preparation for the exam but also to make their work easier and use them for other purposes.

Benefits and challenges of using AI in education

Several factors influence the efficiency and accuracy of artificial intelligence applications in education. Objective questions that require clear answers work well with AI applications and can help optimize

the examination process. AI can also be challenging to apply to more complex and ambiguous issues, requiring further development and refinement.

AI applications can efficiently and quickly score learner responses in online exams, helping trainers streamline exam processes and provide objective and reliable scoring. However, AI may still have limitations regarding more complex problem-solving and interpretation tasks. Technical tasks may include creating schematics, program plans, or block plans. The current state of development of AI still needs to be able to perform these tasks with sufficient accuracy and reliability, as they tend to be more complex and require a higher degree of human interpretation and creativity. Respondents considered using AI most appropriate for written exams, but at the same time, they did not consider using AI relevant for oral exams. Trainers agreed that preparing for AI would require further training for all trainers, especially examiners.

58.3% of educators participating in the focus group discussion expressed that they would like to use AI-based applications in education to facilitate their work and develop better-quality teaching materials. However, 41.7% needed help with how to handle them. Only 25% said yes when asked about the use of online exams. A further 16% still need to give a clear answer. 59% openly rejected the use of such applications. To conclude, it was possible to filter from the focus group discussion that providing teachers with further training on this issue was necessary. In many cases, the mistrust is holding teachers back from using AI-based applications.

Key points regarding the use of AI in education

The study explored the experiences and opinions of educators regarding the use of artificial intelligence (AI) in education. Those surveyed included experienced AI teachers and those who have only recently become aware of the technology. All respondents agreed that AI-based applications will not replace teachers in education. However, they predicted a change in the role of teachers in the educational process. Teachers would like to use AI in online/offline examinations, especially in creating questions and scoring exams more efficiently.

The use of AI in the examination process can provide efficiency and accuracy based on the focus group discussion results. For objective questions, AI-based applications work well and can help to optimize, but more complex tasks require further development. Trainers saw the most significant potential for using AI in written examinations while using AI in oral examinations was not considered relevant. There was agreement among the trainers that it would be necessary to prepare the training participants for such a change. The study showed a demand for and interest in using AI methods and tools among the participants. However, further training and trust-building among trainers were needed to ensure the practical applications would be widely adopted.

Summary, conclusion, and future work

By transforming the learning process, enabling the development of more effective teaching methods, and improving teaching activities, AI is expected to impact the future of education significantly. AI can help educators better understand their students' strengths and weaknesses, making it easier for them to tailor the curriculum and teaching methods.

AI can also save teachers time and energy by automating the assessment of student performance. AI allows educators to focus on personalized mentorship, which can help students achieve better results and progress in the long run. AI in education needs regulation. The aim is not to prohibit it but to use it within reasonable limits. Educating teachers to communicate with artificial intelligence is essential.

The focus group discussions revealed that teachers have a positive attitude towards AI. None of the teachers clearly rejected the use of AI applications, partly because AI is not a new technology. It is also because most teachers are accustomed to being constantly in touch with technological innovations because of their education at a technical university. In this study, we have approached the topic from the teachers' perspective; in the future, we would like to examine the use of AI in education from the students' perspective.

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Tamás KERSÁNSZKI

Workplace learning during the covid-19 epidemic and digital transition

Introduction

Starting from the second half of the last decade, digitization and related Industry 4.0 programs have caused changes in the labor market structures of developed countries. As a result of the economic growth after the 2008 global crisis, the unemployment rate in the EU decreased to 6.2% as of December 2019, which was the lowest value since 2000. The further decrease was stopped only by the pandemic caused by COVID-19 (7.5% EU, December 2020), which initiated a new kind of reorganization in the world of work (Eurostat, 2019, 2021).

In addition to the labor shortage, companies face a new trend affecting all labor market segments. Unique needs and competencies are generated within existing workplaces. New types of workplaces have also been created (e.g., cloud-based technology managers and vaccine coordinators), requiring employees to have appropriate skills and advanced digital competencies. International research shows that transversal skills are becoming more valuable (WEF, 2022). The pandemic fundamentally changed the previous attitude to work and work (OECD, 2021).

National governments are trying to respond to the changing needs of companies by changing financial and regulatory conditions and with some level of education reforms. On the part of employers, competition has developed for employees with the appropriate skills and competencies. Therefore, they undertake career guidance, internal and company training, non-profit, science promotion activities, and benefits packages for young workers, such as housing support and flexible working.

New Approaches to Workplace Learning Research

In workplace learning, sociocultural conceptual perspectives, representing different research approaches, views, and directions, help understand informal workplace interactions. For example, Derrick and his co-authors (Derrick, 2022) reviewed two approaches that describe the relationship between creating the workplace environment and learning in its formal and informal forms. Bailey et al. attempted to grasp the complex and social nature of workplace learning et al. I., 2012) and the "Teaching-Learning Ecologies" approach, which observed the design engineering groups of three companies and the hardware engineering groups of three companies. The data revealed that the two sessions showed different patterns of learning episodes and that the actors showed a different distribution between the learning of each part of the course. Using Roger Barker's different Teaching-Learning Ecologies approach, after detailing the differences between the workplace ecosystems of the two groups of engineers, they showed how these differences emerged from behavioral patterns influenced by unique environmental and technological constraints. The study shows how actions transform environmental constraints into organizational structure and, with a synthetic and pragmatic approach to individual learning as a social activity, emphasizes the role of trainers in workplace learning and questions the existence of a universal model of individual workplace learning (Barker, 1963).

Fuller et al. (Fuller et al ., 2003), informal learning is not the purpose of the workplace. The workplace is artificially created where employees learn with or without structured and exceptional support. It introduces a profiling method consisting of twenty indicators to examine, compare, and evaluate different work environments, which can form a unique picture of the given work environment, the development of the organization, its ability to adapt to the external environment, and last but not least, the learning of the employees. This so-called "expansive-restrictive continuum" framework clearly shows the factors that promote or hinder the environmental conditions of learning, so the relationship between learning and workplace practice can be measured well.

Recontextualization can help employees understand how they make decisions about their workplace environment by encountering the problem and its solutions in different environments and situations. Practitioners constantly develop to meet the workplace's tasks, demands, and expectations. Observing this collective practice can be used to compare teamwork situations characterized by different degrees and intensities of remote work (Guile, 2014).

The "tacit pedagogy" as a system of interactive pedagogical thinking and actions is an essential dimension of the spread or obstruction of practical contexts (Fuller et al., 2006). For example, the effectiveness and sustainability of the measures created to support informal interactions between telecommuting employees were investigated in the case of telecommuting after the epidemic. The research was conducted using the tools of tacit pedagogy to explore the relationship between learning and innovation through workplace practice, examining the informal characteristics of the organizational culture and work processes supporting innovation and their relationship with the structural characteristics and procedures of the organization (Derrick, 2020).

The Economic and Social Dimensions of Telework

Thanks to high-value-added technological infrastructures in developed countries, the number of people joining the labor market from home or in non-traditional ways is increasing (ILO, 2021). The COVID-19 epidemic further increased the number of remote workers, and the majority of employers retained their flexibility in terms of working even with the end of the epidemic and the economic effects caused by the Ukrainian-Russian war, as this resulted in a certain degree of savings, simplified processes and also had a labor retention effect. Companies have also realized that in some cases, in addition to issuing long-term employee visas, they can employ their employees earlier and more easily involve "freelancers" in individual projects by ensuring online work.

With the pandemic physical distancing starting in 2020 (social distancing), innovative processes were also started in sectors less suitable for remote work, which allowed us to witness technological and methodological development.

As a result of the pandemic, in addition to ordering remote work, there was a typical trend of suspending work or terminating the employment relationship. Suspension or loss of work mainly affected people with lower education, blue-collar workers, people with limited health care, low-income people and people with few liquid assets, migrants, and people with disabilities (Galasso, 2020; Mongey et al., 2021; Vyas, 2022), and inequalities were also observed in terms of race (Ray & Ong, 2020). The research highlights that women were more exposed to work stoppages. In many cases, professions with over-representations of women, typically requiring more physical presence and interaction, were at risk (Brugiavini et al., 2021; Mongey et al., 2021). In addition to the continuous digitization and robotization of professions that require low education, the labor market shocks that occurred during the COVID-19 epidemic can thus further aggravate the existing inequalities (Vyas, 2022).

Based on representative research conducted in the USA by Salon et al. (2022), 40–50% of employees expect to telework at least a few times a month after the pandemic, compared to 24% before the pandemic. 90-95% of those who worked remotely for the first time during the pandemic plan to work this way regularly if they have the opportunity. Approximately half of the employees expect they will still be unable to work remotely. New telecommuters are demographically similar to those who telecommuted before COVID-19, and 66-75% of workers expect telecommuting post-pandemic to be unchanged from pre-COVID habits.

Informal interactions during telecommuting periods

The conditions of effective workplace teamwork have already been revealed by several empirical studies (Brown & Duguid, 2001). The rapid transition due to the epidemic changed teamwork, i.e., tasks, processes, and relational interactions. Surveys have shown that while some work functions have improved during remote work, others have significantly deteriorated. As a result, minor modifications and improvements were made to the work functions. In general, however, the awareness and

understanding of the importance of teamwork has increased. There were sectors, such as the banking sector, which, although they had actively used ICT tools in the past, still achieved better results from financial intermediaries who somehow remained physically connected to their clientele (Beunza, 2020).

Digital remote work also creates digital footprints, which are embodied in metadata. This data can help improve work processes but can also be a source of abuse. The collection of this data and big data processing from a research point of view is a new field in remote work research (Leonardi, 2021).

Informal interactions and workplace learning in remote work are examined by Hoff (2021) in a study in which he points out that workplace situations have become less stable and unpredictable during the pandemic. This is because control was often lost at the management level, leading to uncertainty at the organizational level. The role of psychological subjectivity, flexibility, self-esteem, and self-efficacy in professional identity has been strengthened, so more attention should be paid to this in the workplace.

These questions confirm how informal workplace interactions and learning are integral to organizational culture.

The impact of the COVID-19 epidemic on workplace learning

Organizations, jobs, and competencies during the pandemic

The strategy and future development opportunities of the companies were determined to a large extent by the crisis strategic decisions that redraw the network of relationships between the company and the company (Agarwal, 2021). There was no difference in the challenges of the leading human resources during the three waves of the pandemic; only their priority changed in the light of economic, political, and health restrictions and decisions. While in the first wave, the focus was on the development of workforce retention, communication, and remote work, the second phase focused on ensuring the administration and motivation of the workforce. In the case of the third wave, the optimal maintenance of the workforce came to the fore, while motivation and incentives came in third place. (Poór, 2021)

Pató and his co-authors (2021) examined the evolution of the jobs and competencies affected by the pandemic and measured job trends, layoffs, and changes in competencies. In the case of the third wave, the labor market trends initiated by the pandemic have already become visible. Based on the answers provided by the companies participating in the study, it is clear that workers in the hospitality industry (23%), trained workers (11.02%), workers in the field of logistics (9.32%), and salespeople (5.93%) was most affected by restrictions and the slowdown of the economy. We want to highlight healthcare workers, one of the most affected occupations (7.63%), and the regulations of the health crisis, the additional burden on care, caused several employees to leave their jobs. We can find outstanding tourism, hospitality, and warehouse trainee jobs data based on the sector-based division. By the third wave, the reserves needed to maintain the previous operation were used up, so it was necessary to eliminate jobs in the case of 33.05% of the responding organizations. Organizations (30.18%) required expanding jobs or creating new ones (e.g., IT, operator, courier, commercial area, volunteer nurse, COVID coordinator). The terminations and the creation of new jobs still took place in a ratio of 2:1, so an improvement was observed compared to the first and second waves (Pató et al., 2020).

The change in the necessary competencies extended not only to the workplace but also to private life, thus affecting almost the entire population. Based on the investigations of Dajnoki and Kun (Dajnoki & Kun, 2020), the demand for people working in IT and telecommunications increased while the demand for people with a lower education continued to fall. Soft skills, which helped in rapidly changing situations, were valued, while the skills belonging to the specialized field were relegated to the background. In the case of companies, a crisis management method has come into effect, in which competency development has become an essential tool for staying on the market and being competitive. The development of digital skills, especially learning to work in the online space, has become an expected basic competence, in addition to which human competencies such as teamwork, adaptability, stress management skills, conflict management, and emotional intelligence have been valued, which has been evaluated through employee training, flexible working hours, work. They

responded by supporting personal life balance. The scope of the new required competencies was already evident in the first wave. However, it was challenging for HR specialists to hold specific training courses online, measure homework performance, create an online recruitment system for the suddenly appearing surplus workforce, and retain critical people for the post-crisis reorganization period (Jenei et al., 2021).

The situation and changes in workplace learning at the individual level

During the pandemic, work was transferred to the home and workplace learning environments. This space is poorer because the opportunity to learn by watching others, in accidental and informal ways, and through socialization has largely been lost; creating the opportunity required much more conscious efforts. Due to its nature, informal and accidental learning was very typical as a means or result of problem-solving and crisis management since informal learning mostly comes to the fore when deficiencies arise that need to be remedied. Accidental learning is an activity whose primary purpose is not the learning itself but what coincides with solving a problem at work (Watkins & Marsick, 2021).

Formal learning situations could be created more easily with the various methods of distance education, but manual professions and occupations were also at a disadvantage. A study in Germany revealed that the proportion of online work-related learning for professional purposes increased during the early months of the pandemic compared to the previous period. Learning for purely professional purposes increased from 39% to 49%, learning for mixed personal and professional purposes increased from 13% to 17%, and learning for personal purposes decreased. As with the social aspects of remote work, the expansion of online learning has benefited highly qualified employees. Even before the pandemic, employees capable of remote work were more likely to participate in online learning than others. In addition, in the first months of the epidemic, the proportion of remote workers among online students increased significantly. Therefore, expanding online learning opportunities does not reduce inequalities in participation in adult education, but a kind of "Máté effect" can be observed (Kleinert et al., 2021).

The change during the pandemic was substantial in the education sector, so much research also focused on this sector. A small sample of Swedish qualitative research conducted among teachers reveals that the complexity of teachers' work and their commitment to informal learning have increased. Informal learning was primarily manifested in increased collegial cooperation, increased reflection on the possibilities and limitations of the digital work order, and increased problem-solving creativity. Moreover, social and practice-oriented informal learning activities contributed to the growth of teachers' digital competence, the expansion of teaching repertoires, and the awareness of the importance of learning environments (Holmgren, 2021).

Randall (Randall et al., 2022) showed that it is worthwhile for organizations to increase employee learning and development support and opportunities, even in times of crisis, as it significantly contributes to employee retention. The maintenance of workplace learning during online remote work is, therefore, still a priority task for the management of an organization, whether it is about operating informal or formal frameworks.

Workplace Learning at the organizational level: crisis learning

A crisis is a state of the organization when the situation calls into question its basic assumptions and goals and endangers its operation and even its survival. The crisis brings time pressure without the availability of tried and tested coping mechanisms in an ambiguous environment (Antonacopolou & Sheaffer, 2014). The learning mechanisms in crises differ from the usual ones, so it is worth examining their dynamics separately. In this context, we can conceptually speak of crisis-induced learning (a "lesson learning process" triggered by a crisis) (Deverell, 2009), or we can classify the phenomenon in the category of intercrisis (occurring during a crisis) or intracrisis (occurring between crisis episodes) category (Moynihan, 2009). This approach interprets the crisis as a displacement from the point of

balance. However, we can also find a primary position that considers the crisis as a natural element of the life of organizations, a necessary episode of learning and change (Antonacopolou & Sheaffer, 2014).

Empirical studies have established both the hindering and facilitating aspects of crises for learning (Deverell, 2009). According to Christianson et al. (2009), external shocks trigger learning in three ways: 1) act as audits of the existing response repertoire, 2) disrupt organizational routines and facilitate their redesign, and 3) shape organizational identity. Crisis experience is also helpful in new crises (Moynihan, 2008), as it improves the ability to recognize latent problems (Robin et al., 2019); that is, it broadens the scope of action possibilities and instills confidence in experimenting with new ways of thinking, acting and learning (Antonacopolou & Sheaffer, 2014). The crisis also creates a learning space that fosters partnerships across networks and sectors (Robin et al., 2019), and the involvement of external experts (Broekema et al., 2018) encourages the acquisition of significant Knowledge outside the organization and the creation of knowledge synergies.

Learning is blocked by the fact that experimental learning can be pushed back due to the high stakes of possible mistakes and the lack of experiences, processes, and technologies that could be relied on to promote learning. The degree of expected learning is more significant than in previous routine situations, but the focus narrows and limits information processing due to the crisis. Old, outdated answers are often recycled to solve new problems, or wrong lessons are learned based on previous Knowledge. Defense mechanisms (e.g., denial) may also come into play, ultimately preventing learning. In many cases, the problems that arise require actions not at the organizational level but at the inter-organizational level. Hence, a change in the level of learning is also necessary. Political constraints are typical if bargaining or opportunism leads to suboptimal decisions (Moynihan, 2008). First, previous routines must be unlearned to give way to appropriate practices in a crisis. However, once the crisis is over, most new practices, Knowledge, network connections, and other new knowledge capital are also forgotten (Robin et al., 2019).

Digital competence development is the main dowry of the pandemic

The pandemic forced the development of the digital competence of organizations and individuals on a scale never seen before. The concept of digital competence is used in connection with the use of the carriers of digital technologies, often called ICT literacy (information and communication technologies) and digital literacy. However, we can also talk about digital "skills," "abilities," "knowledge," "understanding," "dispositions," or even about "thinking" (Atchoarena et al., 2017). The concept of competence goes beyond the skills of interpretation and use implied by education, text comprehension, or thinking, as it includes elements of skill, Knowledge, and attitude (OECD, 2005).

Digital competence is the confident, critical, and creative use of ICT to achieve goals related to work, learning, leisure, and integration and participation in society. DigComp 2.2, as a citizen digital competence framework, is built from the following elements: (1) information and data literacy, (2) communication and collaboration, (3) digital content creation, (4) security, and (5) problem-solving.

Conclusion

The pandemic caused irreversible changes in our personal and work lives, which proportionally changed the place of work and workplace learning in the existing organizational framework. Most companies experienced this period as a crisis, which they were able to handle with appropriate strategic planning, choosing a crisis management method, and allocating resources (John-Eke & Eke, 2020). While some organizations drifted into the pandemic unprepared, others introduced innovative solutions, opening up new market opportunities, such as reducing administrative costs through digitization development or the rapid introduction of atypical forms of employment. At the level of employees, knowledge-carrying key people were once again valued, as they are part of the corporate memory, which was essential for the restart of organizations (Ramlall, 2004).

Workplace training played a crucial role in the accelerated transition and crisis management and, at the same time, made the organizations aware that specific training needed to be developed. In

contrast, others should be brought into the organization. Within workplace training, a new area was also brought to light, which is meant to treat everyday stress, anxiety, and loneliness. At the same time, however, the pandemic also increased the digital divide at the individual level, which could seriously affect even employees working in several work areas within the same organization, e.g., blue and white-collar workers of a company. There were more digitally developed and less developed sectors that were affected differently by the pandemic in terms of the ability to convert work into online remote work and the digital and technological preparedness of the sector. Accordingly, it is necessary to find solutions not only at the organizational level but also at the system level for the new challenges affecting workplace learning. It is also possible to observe both the intention to develop and to reorganize, which makes post-crisis and inter-crisis learning questionable and, at the same time, worth investigating at all examined levels.

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Kinga Magdolna MANDEL

The homeschoolers inclusion in Higher Education. Szekler case study

Introduction

In its broadest sense, Homeschooling is an education at home with parental supervision (Ray, 2017). Narrowly, it is a mode of education in which the student is linked formally to an educational institution (for example, with a private student status); however, the teaching and learning are performed at home (Nágel, 2012). According to one of our Szekler homeschooling parents, "...all the parents are homeschooling; only some of them even send their children to school" (Szász, 2015). Years ago, we encountered this phenomenon only in American movies; however, since the beginning of the 2000s, it has also spread through Central- and Eastern Europe. In Romania, the first three families started to homeschool in the Szekler region in 2001 (Curcubet G. interview, 2019). The phenomenon became more popular in Romania in 2016 autumn due to a television show that aimed to question or portray it as a negative social phenomenon. However, this contributed to its fame (Curcubet G. interview, 2019). The pandemic offered an opportunity to study Homeschooling when pupils and families experienced some homeschooling worldwide because of the lockdowns. In the US, even the number of homeschooled doubled during the pandemic (McDonald, 2020).

Problem of Research

Our research developed in 2020 on Szekler homeschoolers aimed to analyze the causes and consequences of Homeschooling, the inclusion (social, educational, and labor market) being a considerable part of it. Previously, we published four open-access papers related to the subject: on homeschooling in the Szekler region (Mandel, 2020); on the reasons for homeschooling in Szekler region (Mandel, 2021); on the challenges and solutions of the Szekler homeschooling community (Mandel, 2022) and on the causes and consequences of Szekler homeschooling (Mandel, 2022). In this paper, we will focus on and detail only one aspect not discussed earlier: the inclusion of Szekler homeschoolers in higher education.

Research Focus

There is more research on the reasons (Taylor-Hugh, 2010; Carlson, 2009; Eggendorfer, 2016; Ray, 2019; Hanna et al., 2011; Kuzman & Gaither, 2013; Heuer & Donovan, 2017) and consequences (Ray, 2003, 2017, 2021; Heuer & Donovan, 2017; Cheng, 2014; Cooper & Sureau, 2007; Carlson, 2009; Eggendorfer, 2019; Medlin, 2000) of Homeschooling and less on the higher education inclusion of homeschoolers. Inclusion "is the action, practice, or policy of including any person in an activity, system, organization or process, irrespective of race, gender, religion, age, ability, etc." (Oxford et al.). We can understand the inclusion of homeschoolers in higher education as an action, practice, or policy that makes it possible for them to access and successfully enter into the higher education system, participate and succeed in its activities and processes during their studies, and carry it out successfully irrespective of their learning background.

Research on higher education inclusion of homeschoolers could be grouped into thematic subgroups. Some talk about the homeschooler's inclusion in higher education (Murphy, 2014; Cogan, 2010). Some focus on access generally (Sorey & Duggan, 2008; Lips & Feinberg, 2008; Ray, 2004; Snyder, 2017) or into elite higher education institutions (Basham et al., 2007; Gaither, 2008; Marean et al., 2005). There are studies on the test results of homeschooled in ACT and SAT entrance tests (Cogan, 2010; Ray & Weller, 2003) and homeschoolers skills needed by the higher education (Galloway & Sutton, 1995; Oliviera et al., 1994). Other studies analyze the performance (Ray, 2009, 2015; Gray, 1998; Galloway & Sutton, 1995; Oliviera et al., 1994) and success (Sutton & Galloway, 2000; Ray, 2017) of the homeschooled during their higher education studies. We also encounter studies about homeschoolers' successful graduation (Weller, 2018).

A concern with the research on Homeschooling, in general, is that many of those studies were developed a long time ago. Hence, they need to be updated in different countries and socioeconomic contexts, which makes them difficult to compare. Usually, they are small-scale, small-sample, and non-representative studies challenging to generalize and even to repeat with the same results. Till our research, there were no studies on Szekler homeschoolers, and we could find information on the web page of the Association for Homeschooling Romania (AHSR) with couple of videos on conference proceedings (Szász, 2004; Curcubet G., 2015; Curcubet D., 2015; Szász, 2015) and some papers (Szász, 2004; Curcubet G., 2015; Curcubet et al., 2020) sharing the theories and homeschooling experiences.

Methodology of Research

General Background of Research

The study framework combines constructivist (Vygotsky, 1986) and stakeholder (Smith et al., 2000) approaches. The constructivist paradigm states that people construct their understanding and knowledge through experiencing and reflecting on those. As part of the constructivist approach, the stakeholder paradigm suggests that we can construct the reality based on the understanding and knowledge of stakeholders who experienced the phenomenon and their reflections.

Sample of Research

The research sample included Szekler families with homeschooled children above 18 years (with experience in higher education and the labor market). According to the head of the AHSR in Romania, approximately 300 families were homeschooling, most of which were Hungarian homeschooler families, most of whom live or originate from the Szekler region (Curcubet G., 2015). the traditional Szekler counties of Harghita, Covasna, and Mureş situated in the eastern-central part of the country among mountains (Bottoni, 2008). In 2019, the Association of Homeschooling Romania AHSR president estimated that approximately 15 Hungarian Szekler families have a homeschooled child above 18 years with possible higher education experience (Gurcubet G. interview, 2019). Out of those, we could reach seven families. Most of them were significant, as they were raising 25 children, an average of 3,57 children/family, double that of the 1.63 births per woman fertility rate of the average families in Romania in 2020 (Romania Fertility Rate 1950-2023). Besides, we made secondary data analyses of the Association of Homeschooling Romania (AHSR) data (interviews, articles, and presentations available on their web page, community portal, and internet).

Instrument and Procedures

Our research used snowball sampling from the head of the association AHSR. In total, 13 thematic semi-structured interviews were taken with parents and youngsters above 18. The sample comprises ten semi-structured 45-90 minutes centered interviews out of those seven individuals and three paired ones, 9 with homeschooling parents (2 pairs, one sequential), and 4 with youngsters above 18 years (1 pair). The data collection happened in 2020 August and September. One single interview took place personally. Because of the pandemic, all the others through ICT tools and platforms (Skype, Zoom, Meet, and Phone). Some interviewees answered from Szeklerland, some from Romanian, some from Hungarian (Miskolc), and some from Austrian (Wien) places. During our interview, One family lived and worked in an Iraqi refugee camp.

The Bethlen Gábor Fund (The Hungarian Government) supported the research. The ethical permit (nr. 2020/337) of the research was issued by the Eötvös Lóránd Scientific University's Ethical Board. Nikolett Berecz, a human resource counseling master student at Eötvös Lóránd Scientific University (ELTE), assisted with the data recording.

The limitations of the research were given by the difficulties of the pandemic situation in reaching the target group and its persons.

Data Analysis

We analyzed the quantitative data using an Excel table in ordering and structuring the data and in searching for patterns and specificities.

Results of Research***School enrollment decisions in the phase of compulsory education***

Although most homeschoolers learn at home, they officially belong or are tied to an educational institution (Nagel, 2012). The same is true for the Szekler homeschooled. As the private status in the Romanian school system is reserved for disabled people, formally, the Szekler homeschooled were linked or officially enrolled in Hungarian or American educational institutions.

The children included in this study sometimes switched their enrollment from American to Hungarian schools and backward to pioneer a new option because of the rigidity of one or another system as some of the schools closed down or legislative changes happened (the legal status of Homeschooling altered over time in Romania and Hungary as well); because the first homeschooling pioneers were searching for the best education solutions and due to the higher education goals, language, and cost considerations.

American Homeschooling enjoys a more significant history; thus, enrollment in American education institutions offers more trust and freedom. The parents have more options in choosing the teaching materials and are entitled to evaluate their children's performance. Hungarian enrollment means regular online classes developed through Skype or other ICT tools (Digi-school) and one or two weeks of examination periods developed by the school's teachers every half of the year.

The American system is preparing for the Anglo-Saxon type of higher education entrance examinations, preparing for the different national/international tests and probes like SAT and ACT.

In Hungary, the Education Law changed in 2011, offering less opportunity for Homeschooling, as obtaining the "private student" status became more difficult. However, for Hungarian families living abroad, the possibility still exists. The Hungarian school enrollment prepares for a European higher education career by pathing the way for the end of high-school baccalaureate exams.

The families have to decide which path they would like to choose for their children as early as possible because it strictly determines the high school followed and college/university enrolment possibilities. Later switches are more challenging; sometimes, they require an extra year to prepare for another type of higher education system and its entrance examination requirements.

The most common option we encountered was to have the children enrolled in American institutes for kindergarten and primary school. Mainly, it happened because of the flexibility in choosing the teaching materials and tailoring them to the specific needs of the children and the possibility of parental evaluation. Some families continued in the American education institutions until the end of general school (8th grade), then switched to Hungarian enrollment for the high school to have their children enrolled in Hungarian or Romanian universities. These switches were sometimes difficult for the children. They needed help to adapt and get familiar with the teachers, the teaching methods, requirements, and administrative systems to catch up with materials they had only studied then. We encountered a case where the homeschooled children switching from the American to the Hungarian system failed the high school entrance exam and had to prepare one more year for it. It also happened that the homeschooled children who followed studies in the American system had to invest one additional year to prepare for an advanced level of graduation exam (baccalaureate) in exact sciences in Hungary. Another pupil who learned in the Hungarian system had to make the extra effort to fulfill the different requirements of the American higher education institutions. In an additional year, the youngster learned how to write English essays and prepared for the SAT (the Scholastic Assessment Test, a standardized test requested widely for college admissions in the United States) and ACTs (the American College Testing Test, which assesses college readiness).

Access – entrance to higher education

Choosing a higher education career is demanding. Some American middle-class youngsters take a so-called gap year to travel, work, or volunteer worldwide to get experience and decide upon it (<https://www.gooverseas.com/gap-year/europe>). In Europe, there are a lot of different methods (like education fairs, career- counseling, and school career days) used by schools to assist youngsters in their decisions (CEDEFOP, 2021). Some of the homeschooled included in our sample proved to be very conscious in taking this decision: "I knew that I liked biology and that I would be interested in some kind of health care, but I judged that being a doctor would be too much in terms of responsibility, so if I thought that if I wanted a family, for example, it was not the case ...nursing, or something else, I considered it too little, or I would not have had the stomach for it, and then I actually found this intermediate state, which is the major I am studying (medical diagnostics - author), but specifically, when I decided like this, January 15 was probably the submission time and I was in a small amount of agony from the 10th to the 15th that something had to be written then, but how... I was not 100% sure that it was whether this thing would be good or what, but this was the only major for which I could not say out of the blue that it was out of the question. And so it happened... but I think I made the right choice because I love and enjoy this major" (Simon H., interview, 2020). Probably this is a family characteristic as her little sister was similar in this respect: "she has purposeful plan, that she wants to teach children to swim, and then it would have been possible for her to simply go to physical training college, but that does not give her a university, it would have been just such a small training, and then she chose another way for this for purpose (that of physical-therapist university – the author)" (Simon H., interview, 2020).

We found that most Szekler homeschooling children who graduated high school opted to follow their higher education studies. The transition from being homeschooled to college proved to be smooth in most of our cases.

One "pioneer" family in Homeschooling had its oldest youngster enrolled in international political studies (BA) in an American college operating in Asia. He came back to Europe and did his master's studies in international security (MA) in Paris, London, and Wien, working for an American bank as an intern and studying at the same time (Curcubet G. interview, 2019, Curcubet D. interview, 2020). His educational career is among the most interesting, as he has double experience. At the same time, he has been enrolled in the American system during compulsory education, and he was also trying out Hungarian to acquire experiences and pave the path for other Szekler homeschoolers. He was the only one among the Szekler homeschooled who had already reached the MA level with his studies in 2020. His younger sister did not pursue studies in tertiary education; however, she acquired a specialization in high school, got married, and gave birth to her first children (Curcubet G. interview, 2019, 2020).

Other Szekler families that joined the homeschooling movement in the first couple of years enrolled both youngsters in mechanical technical universities, the smallest in Hungary and the oldest in English language university in Romania. A minor youngster, against all the negative expectations of the teachers, who shared the opinion that it is impossible to enter a state-owned technical university in Hungary by studying at home, succeeded. He was absolved from the higher level of Hungarian state baccalaureate in two sciences, physics, and mathematics, and thus passed into the patinated technical university of Budapest. The oldest youngster spent one year after the baccalaureate searching for his vocation, working, and getting a driver's license until he could decide what to do further (Szász, 2020).

The oldest youngster girls of two homeschooling Szekler families get enrolled in the graphic design BA studies of a Hungarian language university in Romania. One of the girls applied first to a University in Hungary, the MOME (Moholy-Nagy University of Art and Design, Budapest). However, she failed at the second turn, so she had to wait one year, and then she enrolled in a Hungarian language design college in Romania (Király interview, 2020; Blaga parents interview, 2020; Blaga Youngsters interview, 2020).

The two oldest youngsters of another Szekler homeschooling family were choosing the health sector by studying medical diagnostics and physical therapy at the same university in Hungary (Simon interview, 2020).

One significant number family with Szekler roots, volunteering in a refugee camp in Iraq, has its oldest children in Switzerland working and studying in IT and business, the second oldest children above 18 years enrolled in online theological (biblical) studies that are provided by Israel (Gergely parents interview, 2020).

Only one family out of seven did not send their oldest homeschooled pupil into higher education. She acquired work experience in babysitting and doing household and camp work. Her little siblings, who are still in compulsory school age, are not aiming to have a higher education career either; one of them is specializing in becoming a hairdresser, the other is teaching guitars parallel with her studies, and the fourth is likely to become an artist in the field of graphics or digital graphics. In those cases, we could see an intention to find a vocation or the call for a specific profession and acquire at least a high school professional degree. Their children also find their way: "They stand their ground very, very skillfully, so the way she prospered in Budapest hairdressing salons with strangers and colleagues is very good, I say that here in character, so that if she also has an attitude, even mentally, knows what to do in life, what to expect in the world... they also visited America independently, two of them had the opportunity to travel, at two different times, and there they were absolutely... right" (Kovács interview, 2020).

Inclusion during the higher education studies

According to one of the youngsters, he never experienced differences between his background, preparedness, and that of others during his studies. It could also be due to the international and diverse environment and composition of his mates (Curcubet D. interview, 2020).

The differences between the behaviors and manners of a homeschooled are not visible at first; however, in the long run, it could turn out that it is more dressed up with practical competencies than others from the same age cohort, according to one of our interviewees.

"I would say that at first glance, I think, if you sit down and talk to someone, you can't tell that they were homeschooled. But if they became acquaintances for a long time, you see and know, then it might be more practical, they discover this in homeschooled people, because, for example, we were taught not only to understand the subjects, but ...we girls know how to prepare a lunch, or we did a lot of garden work, cleaning, jam canning..." (Blaga youngsters interview, 2020).

Those homeschooled youngsters at college proved to be social; some built up new friendships with similarly hardworking students. According to a parent, "They fit in, now they have not always become the leading individuals of the local rock club or the clubs of such-and-such fraternities, but they have quite a few friends with whom they maintain a closer relationship. This mainly comes from those students who also study more purposefully at university" (Szász A. interview, 2020).

Discussion

Romania has a social consensus regarding the high importance of higher education studies from a prosperous career perspective. A finished college or university degree is the school path to follow, and most middle-class families aim for their children and motivate or even push them in this direction. However, homeschooler families are teaching their children to find their vocation or call without considering or giving too much importance to the social pressure to enter college. To follow the vocation also means investing time and energy in learning a profession (like hairdresser, confectioner, and farmer) that does not require higher education.

There is a difference in how the European and American higher education institutions approach homeschooling. While it is still quite a new phenomenon in Europe that is looked at with some reservation and doubt, homeschoolers are warmly received in America. They even provide separate admission quotas for homeschoolers as they consider homeschooled to be independent learners, or at least this is the image shared by the homeschooled parents.

"Among the American universities, there are obviously those who directly prefer homeschooled students and because they know that they are used to independent work and there they ask for a lot of such work" (Curcubet G. interview, 2019). According to some Szekler homeschooling parents,

American universities prefer homeschooled because they are independent in thinking, learning, and working, more conscientious and reliable than their peers.

"In America, there are special places reserved for homeschooled children in universities, which surprised me, because they say that they are more conscient and more reliable...they know more and are independent thinkers, they don't follow the crowd they have their own opinion" (Király interview, 2019). They learned to think out of the box (Gergely interview, 2020).

However, in our sample, just one of the youngsters attended an American university operating in Asia, and he had to fulfill the exact entrance requirements as his mates. Like in Europe, where homeschooled have no privilege.

We did not find any integration challenges during the higher education studies; the only peculiarity that gets accentuated is that those Szekler homeschooled youngsters follow the *similis simili gaudet* rule by getting together and making friendships with similarly responsible, purposeful, and hardworking students. We found them motivated and dedicated to their studies with above-average, good academic results. One reason for this is that according to the literature and our research, homeschooled learn to think critically and individually at an early age (until they reach the 6th or 7th grade). Furthermore, through international volunteer work (for example, babysitting, animation in summer camps, or assisting older people), they acquire practical skills and intergenerational communication competencies that are also handy in higher education.

Based on our research, they all found the study paths that offered enough challenge and rewards (Pink, 2009) with which they were satisfied. Six out of seven youngsters enrolled in higher education. Three out of seven followed an English language university in Wien/Paris/London, Switzerland, and Romania), and the other three enrolled in Hungarian language colleges (in Hungary or Romania). None of them was studying the Romanian language, which is understandable if we consider that those families belong to the Hungarian minority living in Romania. After finishing their studies at the BA level, one of Szekler's homeschools continued his studies at the MA level.

The challenges faced by the Szekler homeschoolers at the time of our research were similar to those of every higher education student; they all faced the consequences of the pandemic, closedowns, and the sudden turn to online learning. However, homeschooled could face those challenges better, as they have already acquired significant experience in remote and online teaching and learning methods and techniques. At the same time, those were new and out of the blue for their peers.

In this study, we did not enter in-depth into the language of teaching and learning, minority language policies, and challenges, which is a reason behind choosing the educational and work career path. A separate study would be dedicated to how the homeschooled are dealing with the other generations. Another study would talk about the financial reasons and consequences of Homeschooling, analyzing its role in choosing the educational and career way as well. Additional studies could also be dedicated to seeing how the homeschooled are performing in the labor market and whether Homeschooling is sustainable in the long run.

Conclusions

Our research aimed to analyze the higher education inclusion experiences of Szekler homeschooled. Our main finding is that against all the inclusion concerns enlisted in the literature and common sense regarding their inclusion into higher education, the Szekler homeschooled entered higher education without significant problems. So far, they were performing well during their studies.

One extra year of dedication was needed in some cases when they were uncertain, or in the cases in which they changed the system after high school graduation, from Anglo-Saxon to continental or all reverse.

During their studies, they faced the same challenges and dealt with those similarly, in some cases even better, than their peers, like in the case of the lockdown and pandemic situation. It could be because

of the skill set that Homeschooling is developing, like self-awareness, self-reliance, independent learning and thinking, critical thinking, project work-, foreign language competencies, and voluntary and other practical experiences. Because this first homeschooled generation just entered higher education, further and repeated studies would be needed to see how the homeschooled are performing later, whether they graduate successfully, do they continue their studies in the master's degrees and doctoral programs as well, and see how they are dealing in the labor market.

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Escape Rooms and Collaborative Problem-Solving: Examining the Competence of Teacher Candidates

Introduction

The impact of technological advancements on the way people works and interact with each other is significant, especially as knowledge becomes increasingly specialized. To prepare individuals for 21st-century employment, it is imperative that school curricula encompass the necessary competencies. These competencies include mindsets, common ways of working, methods to utilize new tools, and guidance for productive living (Care et al., 2012). They encompass a range of skills such as creativity, critical thinking, problem-solving, decision-making, communication, collaboration, information, and communication technology (ICT) and information literacy, life, and career, as well as personal and social responsibility.

Collaborative problem-solving has emerged as a core competence of the knowledge-based economy and has been a focus of recent theoretical and technological developments in educational research (Awwal et al., 2017). This field of research is relatively new, and its concepts, methods, and research ideas combine collaborative learning, problem-solving, and psychometry (Scardamalia et al., 2010).

The essence of collaborative problem-solving is the integration of critical thinking, problem-solving, communication, and collaboration (Griffin & Care, 2015). It involves a shared activity where group members work together to solve different tasks and achieve a common goal. The individuals within a group may require varying knowledge, expertise, and a range of soft skills, both in terms of interpersonal dynamics and cognitive processes. The key aspect is that the task's goal can only be achieved through collaboration. When competencies require such complexity, tasks designed to measure the construct can be challenging.

Collaborative problem-solving skills

Collaborative problem solving consists of two main components, a collaborative or social element and a problem-solving or cognitive element.

The collaborative or social component refers to the group work activity that takes place to achieve common goals (Hesse et al., 2015). This competence takes part in the implementation of social interactions (Nagy, 1998) and helps the individual to understand the perspective of others, adapt to new conditions, learn from experiences, and apply knowledge in other situations (Semrud-Clikeman, 2007).

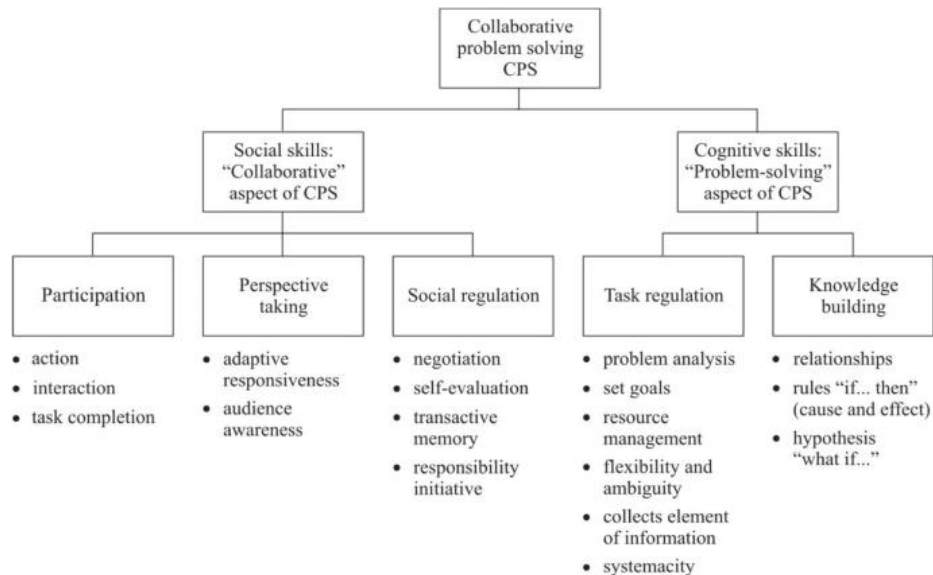
The problem-solving or cognitive component is a cognitive process that tries to transform a given situation into a target situation, so that the problem-solving person does not have an obvious method to reach the solution (Funke & Frensch, 2007).

The measurement of collaborative competencies consists of observing, recording, and summarizing the complex behaviour of individuals and groups, from which conclusions can be drawn about learning and behavioural processes (Awwal et al., 2015). Collaborative problem-solving combines problem-solving thinking, communication, and cooperation (Griffin & Care, 2015).

To date, only a few structured frameworks are available for evaluating collaborative problem-solving competence (Mughal & Shaikh, 2018). One of these is the framework of the ATC21S project, which, with the participation of 250 researchers from all over the world and based on the literature of several research fields (cognitive science, education, social psychology, and psycholinguistics), developed a framework consisting of a hierarchy of sub-skills. These sub-skills play a key role in collaborative problem-solving.

The ATC21S framework links critical thinking, problem-solving, decision-making, and collaboration through three social (participation, perspective-taking, and social regulation) and two cognitive (task regulation and knowledge construction) skills (Hesse et al., 2015). Effective problem-solving does not rely on uniform skills, but on distinguishable sub-skills, some of which are applied according to situational needs (Care et al., 2015).

Fig. 1. Describing skills and subskills from the ATC21S CPS framework



Pöysä-Tarhonen et al., 2018) modified from (Hesse et al., 2015)

These two assumed components of collaborative problem-solving are not mutually exclusive. The social component relies on literature from social and organizational psychology, while the cognitive component relies heavily on classical approaches to individual problem-solving (Hesse et al., 2015).

The existence of these sub-competencies at a high level of development is the prerequisite for successful cooperative problem-solving. Assessment relies on and captures these activities or processes so that the measurement reflects the construct.

The objective of the framework is to evaluate the performance indicators of the collaborative problem-solving competence of the individual and the group, in collaborative situations, in our case in the educational escape room environment. The measurement of competence consists of observing, recording, and summarizing the complex behaviour of the individual and the group, from which reasonable conclusions can be drawn about the problem-solving and cooperation processes (Awwal et al., 2015).

Educational escape rooms

In a physical escape room game, participants are most often locked in one (or more) room and tasked with solving puzzles within a predetermined time limit. The goal of the game can be to get out of the room, find an object, free a hostage, etc. (Nicholson, 2015). Many studies have shown that escape rooms provide people with opportunities to practice a wide range of collaborative skills (Borrego et al., 2017; Clapson et al., 2020; Escribano, 2018; Pan et al., 2017). Clues and hints for escape room puzzles are often hidden in boxes sealed with a combination or key lock that must be opened in a predetermined order. Cognitive puzzles are prevalent in the game (Nicholson, 2015). These can be coded messages, combination locks, ciphers, logic puzzles and other thought-provoking puzzles (Eukel & Morrell, 2021). The rooms are decorated with various objects and decorations, which are often part of the puzzles. It is important that they fit the theme and narrative of the game (Clarke et al., 2017).

The game is suitable for developing many skills, such as collaboration, communication, and logic, as well as critical thinking, search, observation, reasoning, pattern recognition, problem-solving, creativity, application of knowledge and coping with time pressure (Pan et al., 2017; Wiemker et al., 2015). The escape rooms are also interesting in that they offer researchers and designers the opportunity to explore a range of social and technical research questions. They are also suitable for exploring research questions related to communication and collaboration skills (Pan et al., 2017).

Game-based learning has become increasingly popular in education (von Kotzebue et al., 2022). It is true that the spare rooms were primarily developed for commercial and recreational purposes, but teachers quickly realized their advantages that can be used in education as well. In the last few years, a lot of research has been published in the field of educational escape rooms, although most of them are exploratory case studies.

In our research, the students participated in a self-developed escape room game for free-time educational purposes. The goal of the game is to open the money box, which must be completed in 60 minutes. The game encompasses a wide spectrum of escape room puzzles. It does not contain puzzles aimed at teaching or practising educational material, the focus is solely on the observation and measurement of collaborative problem-solving competence and the related sub-competencies.

Fig. 2. The escape room set up in one of the halls of the Faculty of Economic and Social Sciences (BME), Department of Technical Pedagogy, in Budapest, Hungary



Our framework for creating educational escape rooms – SmarTeacheRoom

To date, several frameworks have been published for designing educational escape rooms that include step-by-step procedures for game construction (Clarke et al., 2017; Guigon et al., 2018; Snyder, 2018). Frameworks provide guidance for the design of physical rooms. However, some teachers prefer the development of more cost-effective and more accessible digital escape rooms, since there are many digital tools available that can be used to create educational games in a hybrid or online environment (Kroski, 2020).

Relying on the frameworks that describe the structure of existing escape rooms, we developed our own integrated model that combines and complements different approaches.

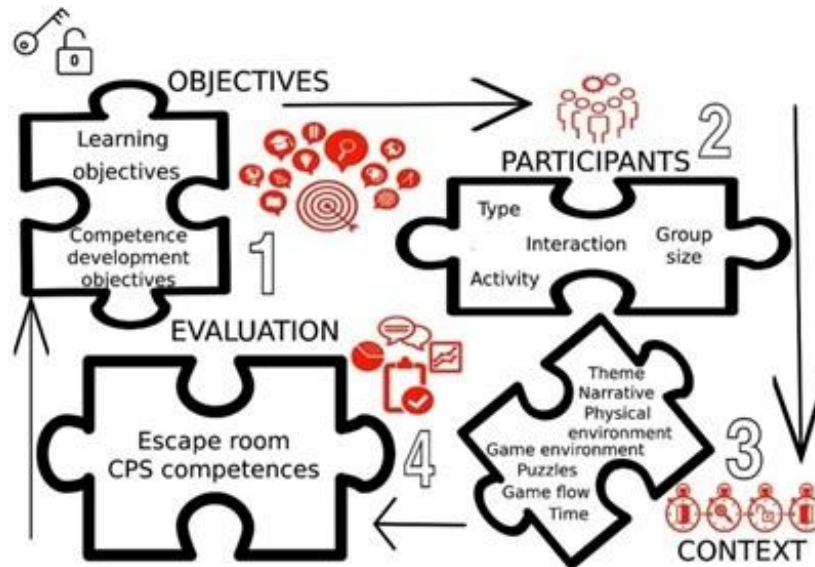
We had to create a model that shows that activities aimed at solving the problem cannot always be completed without the use of social skills. There are also activities that promote the functioning of the group in a collaborative problem-solving process, which do not require the cognitive abilities necessary for specific problem-solving. In the model, the focus is on directly observable activities, since our

observations always refer to behavioral elements, we can only assume the abilities and processes behind the activity.

The framework supports the way of building and evaluating the escape room for educational purposes, as well as the direct observation of problem-solving groups, based on which we want to get an answer to how individuals solve problems and how they cooperated with their group mates.

Incorporating elements such as objectives, participants, context, and evaluation allows for a game-like performance of tasks in the educational environment.

Fig. 3. Theoretical framework (SmarTeacheRoom - STR)



Methodology

Goal

The aim of study was to explore the methodological possibilities of using educational escape rooms to measure collaborative problem-solving competence among students in higher education. The students were observed in the self-developed educational escape room environment, and student behaviour was evaluated based on the observation system developed within the framework of the ATC21S project. The observation criteria system fits perfectly with the competence construct we want to measure in our research: the evaluation of collaborative problem solving, which means working together with others, including the sharing and exchange of ideas, knowledge, or resources to achieve a common goal. The code data obtained from the video analysis were organized into a combined scoring Guttman diagram to allow a visual representation of the scoring.

Specifically, study focused on students from the Faculty of Economic and Social Sciences (BME), Department of Technical Pedagogy, in Budapest, Hungary. The escape room game consisted of a variety of puzzles, and we used a camera to monitor the progress of the groups, which consisted of 4 to 5 participants. After the game, we conducted focus group interviews with the participants and administered four questionnaires and a test to measure various aspects of their collaborative problem-solving competence. These included the Scrambled Adaptive Matrices (SAM) (Klein et al., 2018), Big Five (Caprara et al., 1993), Teamwork Skills Questionnaire (O'Neil et al., 1999), Tóth-féle Kreativitás Becslő Skála (TKBS) (Tóth, 2006), and a background questionnaire.

The main question of the research is whether the escape room method is suitable for measuring collaborative problem-solving competence, and what characterizes the collaborative problem-solving competencies of students.

In this paper, we focused on the qualitative results of the study.

Approach

In our research, content analysis is carried out through video and audio analysis. During the escape room game, student groups were directly observed, and video recordings were made of their activities in the room. One way to review video data is through coding. Coding is an inherently theoretical process and is related to observational practices. We conducted systematic coding using a pre-developed theoretical approach to coding. The observational criteria perfectly match the competence construct we aim to measure: collaborative problem-solving, which involves working with others, including sharing, and exchanging ideas, knowledge, or resources, to achieve a common goal. The use of technical tools (cameras and computers) provides advantages in terms of objectivity, reliability, and reproducibility. The results of the observed behaviour are compared with the results of the interviews, questionnaires, and tests, ensuring data triangulation. The code data obtained from video analysis were arranged in several merged scoring Guttman diagrams to allow for visual representation of scoring. The Guttman diagram arranges the performance of students according to their competence level, and the assessment items are arranged according to their level of difficulty (Guttman, 1974).

The analysis of video data was facilitated by the Dedoose software. The research is based on the mixed-methods approach, and this software is specifically designed for analyzing data from mixed-methods research. The application, which is used for qualitative data analysis, facilitates coding and integration with demographic and other quantitative data.

Evaluation

In research the video data were analysed using the Dedoose software. The research is based on a mixed methodology, for the analysis of which the software is especially suitable. Dedoose is a SaaS application, which means that you only need access to log in through the program's website, although it is recommended to use the desktop application, which does not require an internet connection to work.

The software supports the import of data (text, image, video, sound, Excel tables) and provides the possibility to create, delete and modify variables and code data. It stores the media contents (Media) as text, image, video, or sound files, while the descriptive variables (Descriptors) are stored in tabular format. Variables and media content can be linked (Linked Media) and details can be selected within the media, which are treated as excerpts (Excerpts). Extracts (video, image, audio, or text) are created by assigning codes and code weights. All these objects can be searched, filtered, sorted, and analysed in Dedoose.

The limitation of the software was that it is not possible to assign multiple participants to a video segment. This means that only one participant (or group) can be linked to a video extract. Therefore, e.g., the video material related to the first group was combined with the BME1 group, and the coding results were evaluated at the group level. The collaborative problem-solving competence evaluation framework allows for manual coding, so after the group analysis, we separately evaluated each student's sub-competence level in an Excel table. With the help of the framework, the level of individual collaborative problem-solving competence can be determined in the educational escape rooms, where we evaluate the individuals based on the data recorded through video recordings and observation.

Fig. 4. Manually coding the level of individual sub-competencies – the part of the table

| Code | department | GameGoal | Help | Time | SocialSkills | Reszvet | Csel | Inter | Erofesz | Nezopont | AdVal | KozTud | SzocSzab | Targyalas | Onertek | TartErtek | Felelosseg | CognitiveSkills | |
|-------|------------------|----------|------|------|--------------|---------|------|-------|---------|----------|-------|--------|----------|-----------|---------|-----------|------------|-----------------|----|
| BME11 | közgazdászstanár | Igen | | 32 | 52 | 8 | 4 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | 10 |
| BME12 | mérnökstanár | Igen | | 32 | 52 | 11 | 5 | 1 | 2 | 2 | 2 | 1 | 1 | 4 | 1 | 0 | 2 | 1 | 10 |
| BME13 | közgazdászstanár | Igen | | 32 | 52 | 11 | 6 | 2 | 2 | 2 | 2 | 2 | 0 | 3 | 1 | 0 | 0 | 2 | 18 |
| BME14 | közgazdászstanár | Igen | | 32 | 52 | 12 | 5 | 2 | 1 | 2 | 4 | 2 | 2 | 3 | 2 | 0 | 0 | 1 | 18 |
| BME15 | mérnökstanár | Igen | | 32 | 52 | 12 | 5 | 2 | 1 | 2 | 4 | 2 | 2 | 3 | 2 | 0 | 0 | 1 | 18 |

Results

As mentioned earlier, the code data from the video analysis were organized into several combined scoring Guttman charts to allow a visual representation of the scoring. We have created several statements: group and individual level.

The columns of the Guttman diagram represent the scores for the individual sub-competencies, while the rows show the scores of the groups and students. The order of sub-competencies from left to right places the sub-competency with the highest score first, indicating that this sub-competency is the most developed among the participants and their groups. On the right side, we can see that, for example, group-level self-evaluation (group evaluation) was not present during the game, and the groups did not even evaluate themselves during the interview. The rows show the total scores of groups and individuals from the highest to the lowest, from top to bottom. So, the best-performing group and individual is at the top of the table.

The diagram is easy to analyse because it is easy to read who has which sub-competence, and which sub-competences should be focused on developing in the case of individual groups and students.

Fig. 5. Results of qualitative data analysis - at the level of the individual – the part of the table

| INDIVIDUAL LEVEL | | | | | | | | | | | | | | | | | | | |
|------------------|-------------------------|------------------------------------|---------------------|-----------------|----------------------------|-----------------|------------------------|-----------------------|-----------------|------------|-------------------|----------------|----------------------|----------------|-------------------------------|---------------|------------------------|---------------------|---|
| Student code | 4.3 Resource management | 4.5 Collect element of information | 1.3 Task completion | 1.2 Interaction | 2.1 Adaptly responsiveness | 3.1 Negotiation | 2.2 Audience awareness | 5.2 Cause and effects | 4.4 Flexibility | 1.1 Action | 5.1 Relationships | 4.6 Sytematicy | 4.1 Problem analysis | 5.3 Hypothesis | 3.4 Responsibility initiative | 4.2 Set goals | 3.3 Transactive memory | 3.2 Self-evaluation | |
| | 78 | 76 | 75 | 74 | 74 | 74 | 70 | 67 | 66 | 62 | 62 | 61 | 57 | 50 | 48 | 9 | 4 | 0 | |
| BME14 | 30 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 0 | 0 |
| BME15 | 30 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 0 | 0 |
| BME51 | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 |
| BME72 | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| BME73 | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| BME74 | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| BME75 | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| BME81 | 30 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| BME13 | 29 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 |
| BME32 | 29 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 2 | 0 |
| BME52 | 29 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 |
| BME91 | 29 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 |
| BME43 | 28 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 |
| BME92 | 28 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| BME95 | 28 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 | 0 |
| BME44 | 27 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 |
| BME42 | 26 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 0 | 0 | 0 |
| BME34 | 25 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 0 | 0 | 0 |
| BME53 | 25 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME82 | 25 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME83 | 25 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME84 | 25 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME33 | 24 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME61 | 24 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 |
| BME65 | 24 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 |
| BME22 | 23 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME93 | 23 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME94 | 23 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME54 | 22 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME55 | 22 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME62 | 22 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME64 | 22 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0 | 0 |
| BME12 | 21 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 |
| BME23 | 20 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| BME65 | 19 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 |
| BME11 | 18 | 2 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 |

Fig. 6. Results of qualitative data analysis - at the group level

| GROUP LEVEL (add individual levels) | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|-------------------------|------------------------------------|---------------------|-----------------|----------------------------|-----------------|------------------------|-----------------------|-----------------|------------|-------------------|----------------|----------------------|----------------|-------------------------------|---------------|------------------------|---------------------|-----|
| Group code | 4.3 Resource management | 4.5 Collect element of information | 1.3 Task completion | 1.2 Interaction | 2.1 Adaptly responsiveness | 3.1 Negotiation | 2.2 Audience awareness | 5.2 Cause and effects | 4.4 Flexibility | 1.1 Action | 5.1 Relationships | 4.6 Sytematicy | 4.1 Problem analysis | 5.3 Hypothesis | 3.4 Responsibility initiative | 4.2 Set goals | 3.3 Transactive memory | 3.2 Self-evaluation | |
| | 16.4 | 15.9 | 15.8 | 15.5 | 15.5 | 14.7 | 14.0 | 13.9 | 13.0 | 12.9 | 12.8 | 12.0 | 10.4 | 10.0 | 1.8 | 0.9 | 0.0 | 0.0 | |
| BME7 | 26.4 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.6 | 1.6 | 1.6 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 |
| BME9 | 26.2 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.6 | 1.6 | 1.6 | 1.6 | 2.0 | 1.6 | 1.2 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BME1 | 25.6 | 2.0 | 1.6 | 2.0 | 1.4 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 1.0 | 1.6 | 0.4 | 0.0 | 0.0 |
| BME5 | 25.6 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1.6 | 2.0 | 1.4 | 1.6 | 1.4 | 1.6 | 2.0 | 1.4 | 1.4 | 1.0 | 0.2 | 0.0 | 0.0 |
| BME3 | 23.3 | 2.0 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.3 | 1.8 | 1.3 | 1.5 | 1.0 | 1.5 | 0.8 | 1.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| BME8 | 23.2 | 1.8 | 1.8 | 1.2 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.0 | 1.8 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| BME4 | 22.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.5 | 1.8 | 1.8 | 0.8 | 1.3 | 1.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| BME6 | 22.2 | 1.8 | 2.0 | 1.8 | 1.8 | 1.6 | 1.8 | 1.6 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.2 | 1.0 | 1.6 | 0.0 | 0.0 | 0.0 |
| BME2 | 15.4 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.4 | 0.8 | 0.8 | 1.2 | 0.8 | 1.0 | 0.8 | 0.8 | 0.8 | 1.0 | 0.0 | 0.0 | 0.0 |

| GROUP LEVEL | | | | | | | | | | | | | | | | | | | |
|-------------|-------------------------|-----------------|---------------------|------------------------|-----------------------------|-----------------|------------------------------------|------------|-----------------|----------------------|-------------------|-------------------|-----------------------|-------------------------------|----------------|---------------|---------------------|------------------------|---|
| Group code | 39.6 | 38.5 | 38.1 | 37.0 | 36.7 | 32.8 | 30.7 | 27.6 | 23.7 | 22.7 | 21.6 | 20.8 | 20.1 | 18.0 | 10.0 | 7.0 | 0.0 | 0.0 | |
| | 4.3 Resource management | 3.1 Negotiation | 1.3 Task completion | 2.2 Audience awareness | 2.1 Adaptive responsiveness | 1.2 Interaction | 4.5 Collect element of information | 1.1 Action | 4.4 Flexibility | 4.1 Problem analysis | 5.1 Relationships | 4.6 Systematicity | 5.2 Cause and effects | 3.4 Responsibility initiative | 5.3 Hypothesis | 4.2 See goals | 3.2 Self evaluation | 3.3 Transactive memory | |
| BME7 | 2 | 2 | 2 | 2 | 2 | 2 | 1.67 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 |
| BME1 | 2 | 1.8 | 1.6 | 2 | 2 | 2 | 1.8 | 1.8 | 1.4 | 1.67 | 1.5 | 1.4 | 1.6 | 2 | 2 | 2 | 0 | 0 | 0 |
| BME9 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.6 | 1.8 | 1.75 | 1.6 | 1.6 | 1.6 | 2 | 2 | 2 | 0 | 0 | 0 |
| BME3 | 2 | 2 | 2 | 2 | 2 | 2 | 1.83 | 1 | 1.6 | 1.5 | 1.33 | 1.5 | 1.17 | 2 | 2 | 1 | 0 | 0 | 0 |
| BME8 | 2 | 2 | 1.75 | 1.75 | 1.75 | 1.75 | 2 | 1.5 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 2 | 2 | 2 | 0 | 0 | 0 |
| BME4 | 2 | 2 | 2 | 2 | 2 | 1.83 | 2 | 1.33 | 1.5 | 1.25 | 1.4 | 1 | 1.33 | 2 | 2 | 1 | 0 | 0 | 0 |
| BME5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.25 | 1.5 | 1.5 | 1.67 | 1.5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| BME6 | 2 | 1.6 | 1.8 | 1.6 | 1.6 | 1.6 | 1.6 | 1 | 1.2 | 1 | 1 | 0.6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| BME2 | 1.23 | 1.67 | 1.17 | 1.33 | 1.33 | 1.33 | 1.17 | 1.33 | 1 | 0.67 | 0 | 0.5 | 0.33 | 0.5 | 0 | 0 | 0 | 0 | 0 |

Results indicate that the educational escape room can be used to evaluate collaborative problem-solving competence, as the observed student behaviour during the game can be used to assess the sub-competencies of the observation framework. Based on Gutteman diagrams, more successful groups demonstrated outstanding performance both in social and cognitive competencies. Most of the cognitive elements were only observed at a high level in the three best-performing groups during the game. Hypothesis formation, responsibility initiative, cause and effects, systematicity, relationships, problem analysis, flexibility and actions were the key competencies that distinguished the best performers from all other groups.

The results will be compared with the results of interviews, questionnaires and tests, which will ensure data triangulation.

Summary

This research is pioneering because there are no similar studies to date. Many studies have been published on educational escape rooms, but very few are empirical in nature. Most studies are case studies. Other studies aim to demonstrate the positive impact of escape rooms on learning outcomes through pre- and post-tests and describe the opportunities for using the game in a pedagogical context. Similarly, we have not found any detailed video analysis, and the Dedoose software has not been used in previous studies on educational escape rooms.

Existing experience and research results also support that the escape room for educational purposes can be a tool for any teaching area, as it is easy to apply, student-centered, promotes research thinking, logical and critical thinking (Aubeux et al., 2020; Eukel et al., 2020). Study provides insights into the methodological possibilities of using educational escape rooms to measure collaborative problem-solving competence among students in higher education. We found that our educational escape room game was effective in observing and measuring collaborative problem-solving competences, and we identified several factors that characterized the collaborative problem-solving competence of students from the Faculty of Economic and Social Sciences (BME), Department of Technical Pedagogy, in Budapest, Hungary. Our findings have implications for the design of future educational escape room games and for the development of collaborative problem-solving skills among students in higher education. In conclusion, the use of educational escape rooms allows teachers to measure the current level of their students' collaboration-based problem-solving skills. A well-designed game flow provides an immersive experience that requires full dedication and focus on the task at hand, which presents a challenge for the student. The flow experience makes individuals feel productive and capable of performing at their peak. When the activity involves appropriate challenges and is attractive, it generally contributes to the development of student competencies. As a result, the use of escape rooms in an educational context has been shown to facilitate the strengthening and development of numerous key competencies. This method can significantly contribute to the development of pedagogical work and contribute to its positive improvement.

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Dávid Dobák & Brigitta Szilágyi

„Investigation of engagement and performance among female and male students in technical Higher Education

Introduction

From the publication titled "Women and Men in Hungary," released by the Central Statistical Office in 2020, we can learn that in Hungarian higher education, although not by a significant margin, the proportion of women is already higher than that of men. However, there are significant variations across different fields of study. In the case of engineering sciences, the proportion of men is 73.4%, which means that out of the 30,388 students studying in this field in 2019, 22,305 were men. The difference is even more significant in computer science, where 84.2% of all students (16,796) were men in 2019. According to data from the National Center for Education Statistics (NCES), in the 2019-2020 academic year, women accounted for only 24% of university engineering students in the United States. In the same year, women represented 46% of undergraduate students, indicating that they are significantly underrepresented in technical fields compared to their enrollment in higher education [1].

Due to the COVID-19 pandemic, it was expected that student enrollment would decrease, but there was no significant decline in engineering higher education. The population we examined began their tertiary studies in 2022, with the majority coming to the Budapest University of Technology and Economics after completing high school. It means that the pandemic impacted their studies during the 10th and 11th grades of high school, presenting challenges for students and educators. Educational institutions had to learn to use new digital platforms and plan their curriculum accordingly. Online education also brought new opportunities, allowing us to build on digital platform proficiency even after the pandemic subsided. However, distance learning posed challenges for students as well: they had to adapt to a new learning environment and, in many cases, needed more resources to participate in high-quality online education [2, 3, 4].

We have examined the impact of the COVID-19 pandemic on the knowledge level of first-year students in the recent period [5, 6].

While we anticipated that there would be knowledge and skill-related issues following the pandemic, we could not foresee how it would evolve. Currently, we observe that the most significant impact is evident among those who entered in 2022. It may be because, in March 2020, when online education was introduced, the graduating students had essentially completed the high school curriculum, while those entering in 2022 were still in the foundational process. It was noticeable that our students faced more difficulties with the first-semester calculus course. Their performance on quizzes and exams confirmed it. It motivated us to conduct further assessments at the beginning of the second semester before continuing with the calculus course.

At the beginning of the semester, we administered a commitment questionnaire to our students to assess their attitudes towards the university, the mathematics course, courses that actively use mathematics and courses that do not involve mathematics. The other questionnaire focused on the Student's relationship with mathematics, containing questions about their attitudes and experiences with the subject.

The studied population and the available data

The studied population consists of first-year students in mechatronics engineering and energy engineering at the Budapest University of Technology and Economics in September 2022. These programs attract competent students, with admission cutoff scores of 348 for energy engineering and 429 for mechatronics engineering. The students completed two tests, one related to attitude and the

other to commitment, and additional data about them were available (e.g., final math grades for the semester). The students completed the tests and provided the data during their first semester of education at the university. The proportion of female students is approximately one-sixth of the male students. The detailed breakdown of the distribution by gender and program can be found in Table 1. This table includes only students who have complete data, meaning those who completed both tests and for whom the aforementioned basic data are available.

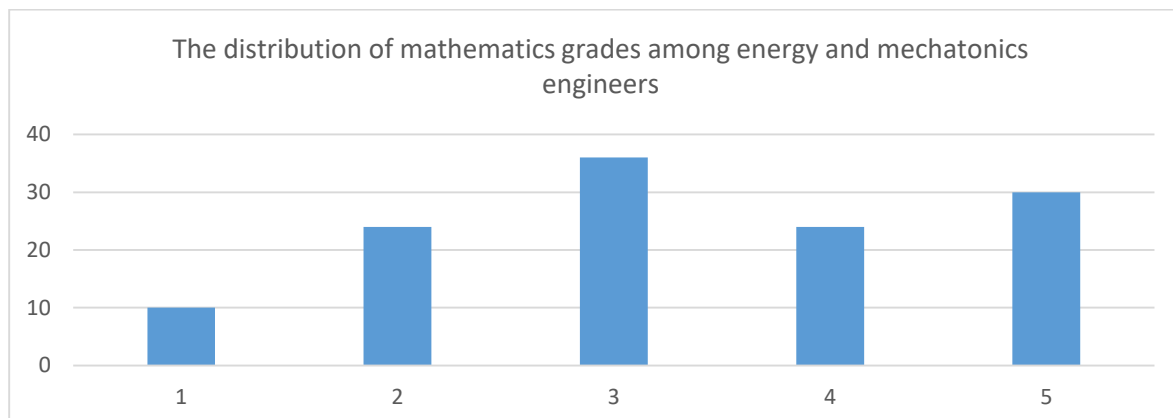
1. table **Respondents distributed by gender and major**

| | | |
|------------------------|---------|-------|
| All | 124 | |
| Females | 17 | |
| Males | 107 | |
| Energy engineers | 43 | |
| Mechatronics engineers | 81 | |
| | Females | Males |
| Energy engineers | 9 | 34 |
| Mechatronics engineers | 8 | 73 |

Statistical characterization of the population

In this section, we will provide a detailed overview of the population by examining various statistical indicators. One of the most important data fields for us is the final mathematics grade. It is crucial because while completing questionnaires primarily provides data for research, the grades significantly impact the students' future (e.g., scholarships, allocation of dormitory places, specialization choices). Therefore, we can assume that students exerted their best efforts and were motivated to achieve their grades. Thus, we do not need to consider the demotivation factor in our calculations. The average of the mathematics grades is 3.323, with a standard deviation of 1.254, and their distribution is illustrated in Figure 1.

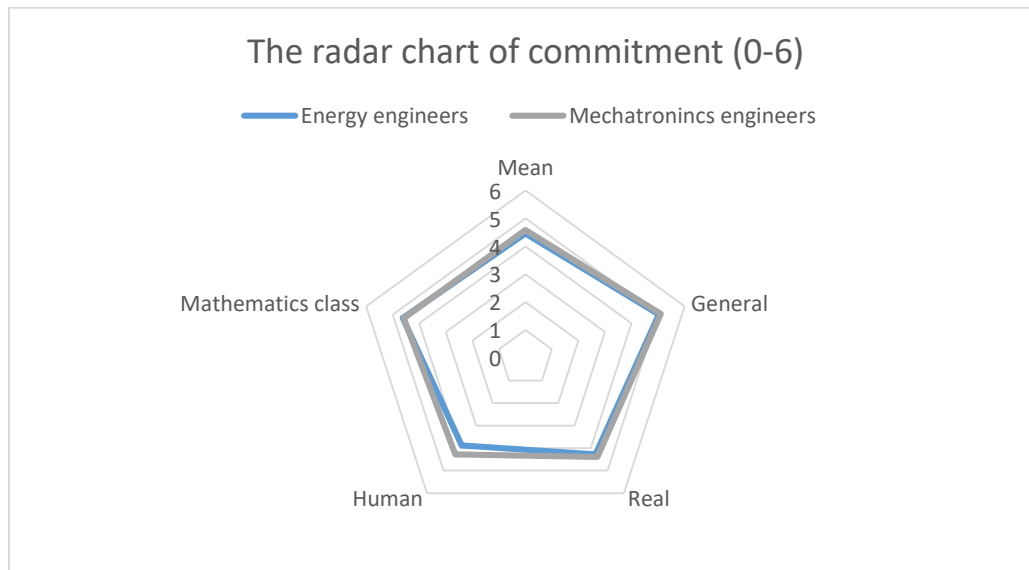
1. figure **The distribution of the mathematics grades**



In the questionnaire, the respondents were also asked to indicate how many 90-minute mathematics classes they had per week. In the regular calculus course, there are two sessions per week, consisting of a 90-minute lecture and a 90-minute seminar. However, students have the opportunity to attend an additional 90-minute practice course as well as two different talent development courses. Many students took advantage of the extra practice options, which further demonstrates their desire to master the subject material at an adequate level. 75% of students take more than three mathematics classes per week, indicating their enrollment in additional mathematics courses (either talent development or remedial). Among mechatronics engineering students, 71.6% have more than three mathematics classes, while the proportion is 81.4% among energy engineering students. The distribution by gender is as follows: 76.6% among males and 64.7% among females.

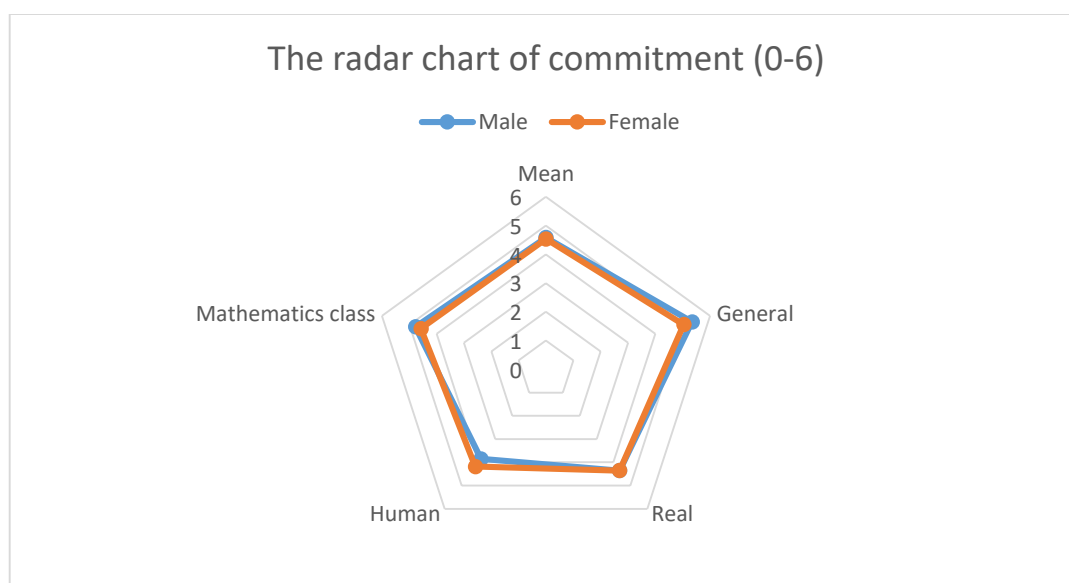
The commitment questionnaire consisted of a total of 40 questions. The questions were rated on a six-point scale (1-6). Ten questions were related to general university commitment, 10 to commitment towards mathematics classes, 10 to science subjects, and 10 to commitment towards humanities and other subjects. For each category, we calculated the average score based on the responses to the respective ten questions, representing the commitment level of the given population. Additionally, we determined the overall average score for all the questions. Figure 2 illustrates the comparison of results between the two majors (energy engineering and mechatronics engineering).

2. figure **Comparison of commitment levels of energy engineering and mechatronics engineering students in a radar chart**



It can be observed that the values almost overlap for both groups, indicating that further search for statistically significant correlations is unnecessary. Figure 3 displays the distribution of results similarly comparing male and female students as before.

3. figure **Comparison of commitment levels between male and female engineering students in a radar chart**



Similar to Figure 2, no significant difference can be observed between the two groups here as well. Therefore, we can conclude that commitment is not significantly influenced by gender or field of study.

The aptitude test consisted of 24 questions using a six-point scale (1-6). These questions monitored both positive and negative attitudes, so when calculating the attitude score, they were averaged with their respective signs taken into account. The aptitude test results can be seen in Table 2, presenting the average scores of the positively and negatively oriented questions.

2. table **Means of attitude test (positive, negative, differential)**

| | Positive mean | Negative mean | Difference mean |
|-------|---------------|---------------|-----------------|
| Value | 39.444 | 31.524 | 7.919 |

The standard deviation of positive scores is 6.141; for negative scores, it is 9.014; and for differential scores, it is 12.618. Therefore, a value can be associated with attitude, which can be further decomposed into a positive and a harmful component. It is worth examining the correlation between these three values (positive, negative, and differential attitude) and the mathematics grades. These values are presented in Table 3.

3. table **The values of correlations with grades**

| | |
|-------------------------------|--------|
| Number of hours-grade | 0.127 |
| Commitment (mean)-grade | 0.146 |
| Attitude (positive)-grade | 0.307 |
| Attitude (negative)-grade | -0.220 |
| Attitude (differential)-grade | 0.307 |

As a reference, the correlation between the number of hours spent on studying and the grade (average) shows an absolute value greater than 0.1 but less than 0.15, indicating a very weak correlation. In contrast, the correlation value of -0.220 between negative attitude and grade indicates a slightly higher magnitude of negative correlation, while the correlation values of 0.307 between positive attitude and grade and between differential attitude and grade are statistically significant. It is important to note that the coincidence of the latter two values is not due to mere chance. The positive attitude also shows a weak positive correlation, so it would be expected that the differential attitude, which is an indicator of negative attitude as well, would exhibit a higher level of covariance with grades. However, in this population, a canceling effect occurs, and the increase in correlation is not manifested. Based on the above, a statistically significant correlation exists between positive, optimistic attitude and good grades.

Methodology

A possible method for analyzing the data is as follows: From the various fields of data, we select at least two that we want to examine. Then, based on one of the data fields, we divide the sample into two groups (exceptionally straightforward if the dividing field is binary). It gives us two different samples to perform a two-sample t-test. This test is used to determine whether the means of the two samples differ significantly (assuming they come from the same distribution). If they do, further investigations are justified on the samples to determine the cause of the difference. The null hypothesis of the two-sample t-test is that the two samples are statistically equivalent. We assume that the distributions of the samples are expected, and if this assumption is not met, the distribution should be corrected. Another requirement for the two-sample t-test is that the variances of the two samples are equal. This condition is tested using an F-test. The null hypothesis in this test is that the two samples, following a normal distribution, have equal variances. If we accept the null hypothesis after the test, then we proceed with the t-test.

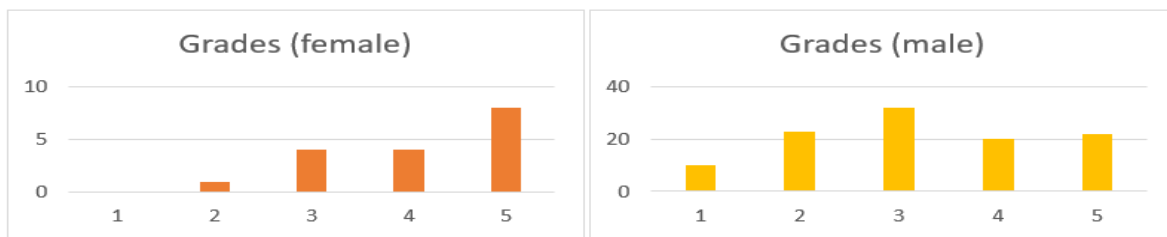
Comparison by genders

The most obvious comparison is to examine academic performance based on gender. The trend of fewer women studying and working in STEM fields than the gender ratio would suggest is slowly diminishing even in countries that prioritize gender equality [7]. For example, Finland's indicator in this category is 30.5%. Interestingly, Hungary's rate of 32.63% is considered good globally, although, among European Union countries, we only surpass Finland and Luxembourg. The better position on the list of all countries is not surprising, considering that some countries still restrict women's participation in higher education. Among the 27 EU countries, only five (Norway 55.07%, Lithuania 54.96%, Latvia 52.71%, Denmark 51.72%, and Bulgaria 50.14%) have achieved a female representation of fifty percent in engineering and scientific careers. In many countries, including Hungary, it is common for women to receive less pay for the same work. Therefore, the comparison is interesting and relevant from this perspective. The question may arise as to how the predominantly minority group of female students (which is particularly true for the population we are examining) may influence their results.

In most cases, this would likely have a negative rather than positive impact on female students. However, at BME, the students already represent a select group. Typically, the best high school students with high entrance exam scores and advanced math or physics exams come here to prove their competence at the university. This desire to prove themselves can result in minority students (in this case, women) performing even better than their male classmates.

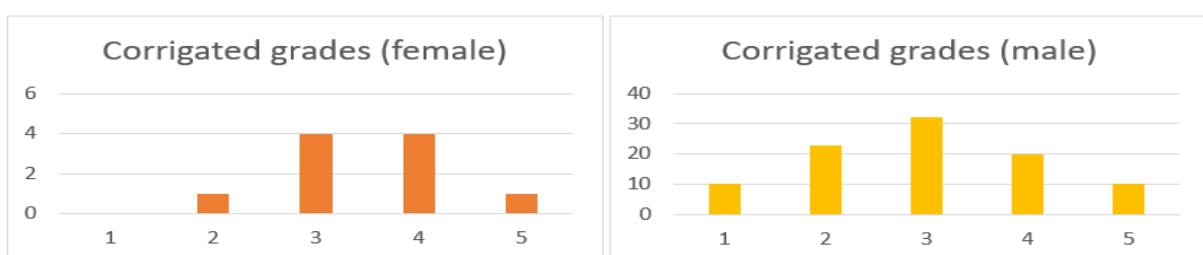
According to Figure 4, the distribution of grades does not follow a normal distribution, contrary to what is required for the procedure described in the Methodology section.

4. figure **The distribution of grades by gender**



In both cases, a curve indicating a normal distribution can be observed, but there is a significant overlap of grades at the top mark. Deviation from the normal distribution can often indicate an external influence. Richard Quinn, a professor at the University of Central Florida (UCF), observed a similar phenomenon while grading papers. The familiar distribution suddenly showed a more minor standard deviation and a higher mean. He confronted the students with these highly unlikely results, and they later admitted to cheating. Of course, external influences do not always imply cheating. In the population we examined, it is much more likely to be a form of saturation (since a grade of six cannot be given to students who perform exceptionally well). To conduct the tests, we need to separate the normal distribution from this disturbance. In doing so, we obtain distributions in Figure 6 that can be considered genuinely normal.

5. figure **The distribution of grades by gender (corrigated)**



First, let's perform the F-test! The null hypothesis is: $H_0: \sigma_M^2 = \sigma_F^2$ (M: male, F: female). A tapasztalati átlagok a következő módon számíthatók:

$$\bar{M} = \frac{1}{m^*} \sum_{i=1}^{m^*} M_i, \quad \bar{F} = \frac{1}{f^*} \sum_{i=1}^{f^*} F_i,$$

where m^* and f^* represent the number of males and females in the adjusted samples. Based on the data, $m^*=95$ és $f^*=10$, and the sample means are $\bar{M}=2.968$ and $\bar{F}=3.5$. The sample variances can be calculated as follows:

$$S_M^2 = \frac{1}{m^* - 1} \sum_{i=1}^{m^*} (M_i - \bar{M})^2, \quad S_F^2 = \frac{1}{f^* - 1} \sum_{i=1}^{f^*} (F_i - \bar{F})^2.$$

Performing the calculations, we have $S_M^2=1.2842$ and $S_F^2=0.65$. From this, $F_{emp}=(S_M^2)/(S_F^2)=1.976$. According to the F-distribution table at a 5% significance level, $F_{krit}=2.759$. Since $F_{emp} \leq F_{krit}$, we accept the null hypothesis, indicating that the variances of the two samples are equal.

The next step, after checking the equality of variances, is to perform the two-sample t-test. The null hypothesis is: $H_0: E(M)=E(F)$, meaning that the means of the two samples do not significantly differ. The t-value can be calculated using the following formula:

$$t = \frac{\bar{M} - \bar{F}}{\sqrt{(m^* - 1)S_M^2 + (f^* - 1)S_F^2}} \cdot \sqrt{\frac{m^* \cdot f^* \cdot (m^* + f^* - 2)}{m^* + f^*}}.$$

After performing the calculation $t=-1.4435$. According to the Student's t-distribution table, for $m^*+f^*-2=103$ degrees of freedom at a 5% significance level, the critical value is $t_p=1.29$. Since $|t| \geq t_p$, we do not accept the null hypothesis, indicating that the two samples differ significantly at a 5% significance level.

Conclusion: Girls performed statistically significantly better than boys.

A commonly perpetuated myth is that girls are less interested in STEM fields. However, multiple studies have shown that girls are just as interested in these areas as boys, but stereotypes can deter them. Research has also shown that outside of school, such as in coding clubs and robotics teams, girls participate in STEM activities with equal likelihood as boys.

Another misconception is that girls need to be more talented in technical fields. There is no evidence to support this claim. Studies consistently demonstrate that girls perform just as well as boys in STEM subjects, and in fact, girls outperform boys in these topics. According to a study published in the Science Journal, girls performed equally well as boys on standardized scientific and engineering skills tests but were less confident.

The results presented by us can also help dispel general misconceptions about girls' abilities in technical fields. Ultimately, the goal is to create a fairer and more supportive environment for girls and women in technical education and careers. However, the low representation of female students in STEM fields means that a large portion of the workforce is not benefiting from the opportunities female employees provide, and the industry and technological development needs to catch up in harnessing female talent.

Conclusion

In our article, we conducted fundamental statistical analyses of the population. We found that contrary to stereotypes, women can perform well in STEM fields and, in some cases, even outperform their male counterparts. It does not imply that someone is inherently smarter based on their gender, but it

does debunk the assumption that men have a clear intellectual advantage in STEM fields. It is an important conclusion, as numerous studies today examine gender performance and its correlation with pay differentials.

In our further research, we will also employ artificial intelligence algorithms to uncover complex and hidden correlations.

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Nóra HEGYI-HALMOS

Career Socialisation and Professional Identity

In society and the labor market, we have different positions and statuses, and we have to perform the tasks that go with those roles. According to traditional role theory in social psychology, "a role is a specific mode of response, an indoctrinated, habitual, automatic and mostly unconscious chain of behaviour that takes place in the context of typical social attitudes, emotions and self-identifications." (Buda, 1965 quoted in Csepeli, 2001, 102-103) The elements of behavior required to occupy a status or position are determined by the roles the occupant of the status must perform. These roles are associated with attitudes, values, and behavioral patterns (Hidy, 2001). In the case of occupations and professions where the roles and tasks can be clearly described (doctor, teacher, architect), the set of roles required can be more easily formulated. However, the industrial revolutions and the development of technology have led to an increase in the quantity and quality of occupations and jobs. As the division of labor becomes more differentiated, more and more new occupations are being created or significantly transformed in terms of their content. The immediate environment, the family, often does not have the correct information to help young people choose a career and socialize in the changing world of professions (Borbély-Pecze, 2017).

In many cases, the positions (occupations) on the labor market today require a more varied set of roles from the individual, and it is more challenging to clarify the roles since these occupations do not have rigid position descriptions but are instead loosely defined and highly variable (Goffman, 1978). One such occupation is community organizer, where it is possible to function successfully in various fields, even with different attitudes and strengths. Identity formation in careers with such a complex set of roles is, therefore, challenging, even though a solid professional identity is an essential prerequisite for success in any profession.

Career socialization

Career socialization is part of socialization during which individuals learn the behavioral tools, values, roles, and attitudes required to perform a particular career or profession. Socialization theories (Super, 1980; Schlossberg, 1981; Holland, 1997) emphasize the role and importance of social learning and examine the social impulses that may influence career choice, such as the social demands that are made on individuals in a particular occupation (Hegyí-Halmos, 2018). A key concept in career socialization theories is occupational roles, i.e., the behavioral norms and habits associated with a particular occupation, acquired through imitation and experiential learning. András Zakar (1988) refers to these theories as sociological and socio-economic theories, which emphasize primarily the dependence of career choice behaviour on the environment. Young people's career choices are not only determined by their characteristics but also consider economic and sociological factors, i.e., they evaluate the available careers from an economic and prestige point of view (Hegyí-Halmos, 2008).

Among the theories of career socialization, the theory of P.W. Musgrave (1967) is perhaps the most complex. He was primarily concerned with the acquisition and taking on of different social roles. In his concept, he emphasized the importance of the different social roles that can be acquired and taken on throughout the life course. He argued that many alternatives are available to individuals throughout their careers, with various roles to choose from. However, the choices and decisions made along the way can determine and limit further options. Musgrave also explored the possibilities of social role learning, calling it latent role learning, the process by which individuals learn the attitudes, values, and behaviors associated with occupations or career roles. Learning about different roles helps individuals to choose the one that best suits their potential. The essence of Musgrave's theory is anticipatory socialization, i.e., trying out different roles and gaining experience with the requirements and role

expectations of different occupations (Hegyi-Halmos, 2008). Musgrave divided the process of occupational socialization into four stages of development:

- Pre-career socialization is latent role learning, during which the individual learns about different career roles and matches them to his or her characteristics.
- Career transition is a period of entry into professional life during which individuals make decisions based on their existing role experiences and preferences.
- Professional socialization, during which the typical role behavior of a given career is learned, either from those already working in the profession or through work placements or training by trainers. Individuals try to adapt their self-image to the expectations of their colleagues and superiors.
- In case of a possible career change, tertiary socialization is typical (Szilágyi, 1993; Zakar, 1988; Hegyi-Halmos, 2008).

Sociological, socio-economic, and social psychological theories take a static view of the career choice process. Although they examine several important factors, they place less emphasis on the potential of the individual and neglect the active role of the individual in the process of career development. Their theories are often highly simplistic and, like all static models, fail to describe the many different systems of influences that are involved in the process of career choice (Szilágyi, 2005).

According to Martin Kohli (1981), individual activity plays a significant role in shaping life paths. He distinguishes between objective and subjective life courses. He considers objective life course to be the succession of different positions over time, the actual occupational behavior, while subjective life course "refers to the subjective interpretation and formation of experiences of moving from one position to another, and thus also to repeated choices between different options." (Szilágyi, 1993, p. 57) According to Kohli, career choice can be conceived as a choice between different career patterns, where the choice is always open to the chooser. He believes that certain objective career norms are socially predetermined, the orienting factors of a career decision behavior. Career choice is a subjective perception and shaping of objective life path norms. Kohli has examined career choice and career development as a process that is both socially directed and structured and dependent on deviations from and individual interpretations of objective career norms (Szilágyi, 2004).

Identity development is often thought of as linear because of its relative stability. It is also reflected in Holland's (1997) understanding of career identity as a clear picture of an individual's goals, interests, and abilities. In his view, small changes contribute to a stable identity, while frequent and significant changes can lead to a diffuse identity (Koltói & Kiss, 2020).

Mark L. Savickas (2002) has focused much attention on the relationship between identity development and career identity. He is credited with the constructivist approach to career construction theory (Career et al., CCT). In his view, careers are not chosen but constructed, i.e., continuously built through the interactions of society and the individual. In the construction of a career, the individual is an active agent throughout, and it is therefore more important to focus on the career and its continuous development rather than on the choice of career. The aim is to enable individuals to use work for their self-actualization and self-expression, and to this end, it emphasizes the importance of careful career planning, openness, internal control, and belief in one's effectiveness. Savickas's model emphasizes the development of self-awareness and career awareness and introduces the concept of career adaptability, which refers to the skills an individual needs to manage decision-making situations that arise during a career independently. In his model, he considers the experience of self-efficacy in the construction and analysis of an individual's life career as extremely important (Borbély-Pecze et al., 2013; Szabó et al., 2010; Hegyi-Halmos, 2008). Savickas emphasizes the importance of a narrative approach in understanding the formation of career identity; according to him, the individual's career choice story is linked to his own life story, and during the career choice process, the individual constructs his narrative, which links the past, present, and future. He breaks down identity development into stages, during which the individual undergoes cognitive, emotional, and social maturation. During identity development, identity crises may occur, during which the individual may experience doubts and uncertainty. These periods allow individuals to reassess their career identity (Savickas, 2013).

Among the domestic models, the research of Klára Szilágyi (2005) on career socialization should be highlighted. Szilágyi divided the life course into two phases, career adaptation and career activity, and then further subdivided these into the phases of general education and vocational training. At the same time, career activity is divided into the phases of professional integration and beneficial professional activity. In his opinion, this process is linked to psychological components such as personality development and developing aptitude for a career. Klára Szilágyi has investigated and formulated the relationship between career maturity and aptitude in her research among medical students. In her opinion, career readiness can develop during university education. Naturally, the more apt a student is for a particular profession, the greater the chances of success in developing career readiness. The author has considered it essential to analyze in detail the characteristics of the career choice process, the aptitude characteristics, and the personality characteristics. Among the career choice characteristics, the preservation of the career vision and the effort to achieve the career goal influence career socialization. The development of the necessary skills to an appropriate level and the development of specific skills determine success.

Regarding personality traits, the primary motives for career choice may be rearranged (Szilágyi 1993, 2005 cited in Hegyi-Halmos, 2008). According to Szilágyi's research, either differentiation or stagnation occurs in career socialization during the university years. In his studies of medical students, he observed differentiation in intellectual abilities, special skills, and emotional relations while stagnation in the development of interest orientations and motivation (Szilágyi, 2011).

Magda Ritoók (1978, 1986, 2008) has primarily researched the personal conditions of identification with the chosen career, i.e., the conditions of career identification. She started from the concept of career socialization, which she interpreted as a process whereby the individual becomes part of the social division of labor, adapts to his or her environment, and thus becomes an effective and recognized member of society. He saw the process of career identification as a component of career socialization, a process that develops in parallel with the life course. According to his theory, career identification is a relational concept, "an indicator of the quality of the match between the requirements of the career and the dominant personality traits of the person doing the work, a dynamic reflection of the career and personality development process, which reflects the individual's career satisfaction, achievement, and social activity, and which also indicates, in a specific way, the individual's self-actualization in work." (Ritoók, 2008, 16) As conditions for the emergence of career identification, the author identified primarily the correspondence between the experiential content of the career and the individual's experiential needs, which, of course, may vary from career to career and from individual to individual. Those who can identify with their career to a high degree and are fully committed to a task experience greater pleasure in their career. Mrs Ritoók stressed the crucial role of personality traits as a prerequisite for career identification and consequently considered personality development to be of utmost importance both in the family and at different levels of the educational system in order to promote successful career identification (Ritoók 1986 cited in Hegyi-Halmos, 2008).

The concept of professional identity

An individual's self-image is a fundamental determinant of his or her professional career. There are many definitions and interpretations of identity and professional identity. Professional identity is the part of one's self-image related to one's profession (Tajfel, 1981). Slay and Smith (2011) define professional identity as a kind of professional self-image, i.e., the image we use to define ourselves professionally.

As a result of postmodern social transformations, identity as a static state is being challenged, as we are constantly changing, learning, and adapting to the world around us to become what we are. The individual's self-image and identity change dynamically due to his/her experiences, but at the same time, he/she strives for security and stability, thus filtering the information flowing toward him/her by his/her self-evaluation (Sipos, 2020). The internal interest, experience, and acquisition of professional knowledge and skills strengthen the level of professional identification. The relationship between the individual and the profession can become close due to the encounter with immediate demands and

expectations and the successes and failures that occur during practical work. Vocation is a high-level relationship to our work activities where role expectations associated with the career become internalized, and our activities are guided by our beliefs (Váriné, 1981).

Societal factors are important determinants of our professional self-image. By choosing a profession, an individual becomes a member of a professional community, i.e., professional identity also defines a sense of belonging to a group. The social psychological approach to professional identity is based on the social identity theory (Koltói & Kiss, 2020). Tajfel (1978), in his social or associational identity theory, states that a person's positive self-image results from identification with the positively valued groups of which the individual is a member (Kende, 2021). Social identity theory is concerned with how social identities (belonging to a nationality, ethnic group, gender, occupation, or profession) influence an individual's attitudes and behavior, either within or about other groups. Peer identity is highly influential when the individual has a powerful sense of belonging to a particular group and feels a strong emotional attachment to the group. The process associated with forming social identity is characterized by a tendency to conform to in-group norms (assimilation) and intergroup bias (a more positive evaluation of the group or those within the group about those outside the group). Social identity theories thus refer to the self-stratification of individuals about group membership, while personal identity refers to how individuals define themselves. The former refers to a kind of 'we' concept, while the latter refers to a concept of 'self'. As an integration of the two concepts, Turner and colleagues (1985) have developed the theory of self-categorization, according to which one's self-concepts (self-image) encompass both personal identity and social identity. Depending on the context, personal or social identity may be more salient for the individual (Leaper, 2011).

Based on Tajfel's (1981) theory, we can distinguish between cognitive (knowledge), affective (emotions associated with belonging to a group), and evaluative (valuing belonging to a group) aspects of identity. Considering a profession as a group, the cognitive element of professional identity formation is integrating professional identity into individual identity, i.e., when we consider ourselves members of a professional community. The emotional element is the commitment to a particular group, while the evaluative element is the collective self-evaluation. Among the aspects of social identity, the emotional components are perhaps the most influential since the degree of commitment to a group is the most influential on the behavior, values, and attitudes that align with the group's expectations (Koltói & Kiss, 2020).

Our professional identity is shaped by our values, expectations, and beliefs; according to Caza and Creary (2016), it fundamentally determines our attitudes, emotions and how we behave in our work. The professional self-image develops with the professional identity (Váriné, 1981). One's professional identity can serve as a framework for one's self-concept, i.e., through developing a professional identity, the individual can give purpose and meaning to his/her career to formulate how to be a valuable member of society (Caza & Creary, 2016).

More broadly, modern understandings of professional identity approach the issue from three perspectives. Firstly, our understanding of ourselves as professionals; secondly, the integration of our professional skills and attitudes; and thirdly, the context of belonging to a professional community. On the one hand, professional identity is an image of the self as a professional and the professional competencies associated with it. Individuals form their new professional identity by integrating their attributes and the competencies acquired during their professional training, which they can further develop based on feedback from the professional community. The process of professional identity formation is, therefore, both intrapersonal and interpersonal. In the intrapersonal process, individuals develop their professional knowledge and competencies through theoretical and experiential learning with the support of trainers and other professionals. They then receive feedback on their professional skills from professionals in the field during their practice based on the skills they have acquired in their formal education. Professional identity is consolidated when an individual is able to integrate personal and professional identity through the integration of experience and theory and to self-assess. The interpersonal aspect highlights the role of the professional community. Socialization within the professional community is essential for developing a professional identity. The acquisition of expectations, norms, attitudes, values, and ways of thinking can be achieved through these

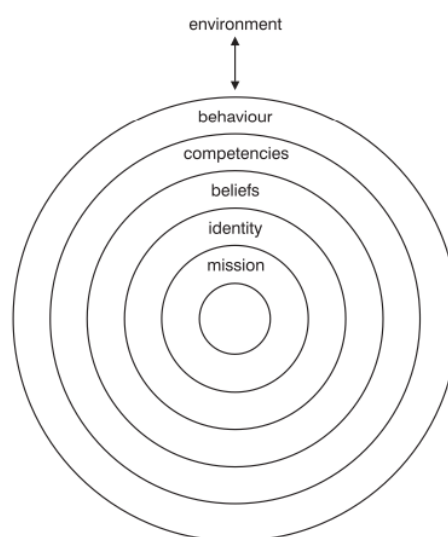
communities and immersion in professional culture (Gibson et al., 2010). Thus, the unity of theoretical and practical training is essential in professional preparation, and the use of professional practice in a natural professional environment is crucial for forming an identity.

The structure of professional identity

Developing a professional identity is a continuous work of discovery, which requires reflection, involvement, and conscious work on the part of the individual. They need to know their professional skills and attitudes and be open to feedback from others. Collaboration between teachers and students is essential in the process of becoming a professional and in the process of developing and developing a professional identity. It is not only essential for trainers to transfer knowledge and develop competencies but also for them, as professionals in the field, to transmit values and attitudes to students that are in line with the expectations, values, and attitudes of the professional community. Professional preparation should not be limited to developing knowledge and skills but should also be understood as the unfolding and shaping the self (Maroney et al., 2019). Brown, in his dynamic model of professional identity formation, states that "identity is formed in specific professional communities through socialization, interaction and learning" (Bomrose and Brown, 2019, cited in Koltóí and Kiss, 2020, 585); thus, this model also emphasizes that direct involvement in work activities plays a vital role in identity formation, as it allows young professionals to gain direct experience and experience belonging to the profession (Koltóí & Kiss, 2020).

It is worth mentioning Fred Korthagen's onion model (2005), whose layers help to understand how the professional self-image is built up from implicit and explicit elements (Figure 1). The model presents different levels that determine the functioning of a profession (Korthagen presented his model for the teaching profession). The model is based on the idea that the internal levels determine the individual's functioning at the external levels, but the reverse effect can also be observed. The deepest levels in the model are the professional identity (self-identity) level and the mission level, which essentially deals with what inspires the individual and what gives meaning and significance to one's work or life. This level is, according to Korthagen, a transpersonal level, as it involves the meaning of our existence and the role we see ourselves as playing in society (Korthagen & Vasalos, 2005).

Figure 1 Korthagen's onion model, source: Korthagen and Vasalos, 2005



Caza and Creary (2016) also highlight that in forming a professional identity, the individual takes an active role by acting and interacting with others in a social context. In identity formation, individuals seek to develop a self-image that best corresponds to their image as members of a particular profession.

Caza and Creary (2016) raise the question of how professional identity structures are formed for those who have to fulfill multiple, complex roles throughout their life or even work. Nowadays, there are many professions, occupations, or positions that require a diverse set of roles from the individual, where the tasks to be performed tend to be loosely defined, variable, and complex. In such cases, the structure of professional identity is also more complex. Similarly, a complex identity structure characterizes those engaged in multiple work activities simultaneously or who change careers or professions in their lives, as, in this case, they have to develop a new professional identity. Identity structures can, therefore, range from the simple to the complex. Its complexity is determined by how individuals consider their multiple identities similar in terms of their typical characteristics. A person who reduces multiple professional identities into a single professional identity has a simple professional identity structure. A university professor may define himself simply as a researcher, while another with a more complex identity may define himself as a researcher and a lecturer at the same time. The complexity of identity is not determined by how many different roles an individual identifies with but by how the individual structures these identities about each other. Caza and Creary present five types of professional identity structures, from simple to more complex, illustrated through the example of the university professors above. In the first - the authors call this structure an intersection - the individual defines him/herself at the intersection of two professional identities, i.e., the professor sees his/her professional identity as the intersection of the identities of the teacher and the researcher. He can identify with those who also experience their identity in this way.

In a dominant identity structure, the individual defines him/herself as a primary professional identity to which all other identities are subordinated. The professor defines his professional identity as a researcher and allows this identity to dominate his teaching identity. He sees himself as a researcher, identifying more with the group of researchers (regardless of the field they are researching) than with the lecturers. In a structure of compartmentalization, the individual defines him/herself in multiple professional roles but experiences each professional identity at different times. The professor speaks of himself as a teacher and a researcher but experiences these identities simultaneously, alternating his dual identity. In this way, he identifies with both professional groups but separately. She considers both roles and identities essential and valuable but chooses and experiences only one at a time. The following two identity structures are more complex, in which the individual organizes his identity around several identity components at once. A holistic identity is typical of professionals who have to conform to multiple professional identities, such as a counselor or even a community organizer, who may work in multiple contexts with a highly complex set of roles. An individual with a holistic identity structure creates a complex professional identity structure, identifies with multiple identities, sees him/herself as a member of multiple professional groups, and considers all professional identities equally important. The fifth identity structure is called augmentation by Caza and Creary. The multiple professional identities of an individual with this identity structure are distinct but complementary (augmenting, enriching), often appearing together in the same situation. An individual with an augmentative identity structure identifies with multiple professional identities simultaneously, respecting each identity separately and simultaneously but not attempting to view them as a more holistic category (Caza & Creary, 2016).

Summary

Professional identity thus encompasses what a professional knows what he or she is capable of doing when dealing with particular situations, and it includes the values and attitudes that drive his or her actions (B. Erdős et al., 2021). In developing a training curriculum, traditionally, more emphasis is placed on developing knowledge and skills than on developing and improving attitudes, and these components are also more challenging to measure. Our planned study aims to use identity structure analysis (ISA) (Weinreich, 2004) to identify the main elements of community organizers' professional identity, the interrelationships, and dynamics between each element, and then to incorporate the findings into the curriculum development process for a bachelor's degree in community organizing.

As outlined above, the identity of a profession is determined by several factors linked to the individual's personal values, goals, and experiences and influenced by the external environment. The following factors play a role in shaping professional identity:

- Interests and skills - an individual's interests and skills determine what professions and careers they find attractive and what they feel they can succeed in.
- Personal values and motivations - an individual's intrinsic values and motivations influence their commitment to a profession.
- Family and social expectations - family and social norms can influence career choices.
- Learning and work experiences - previous learning and work experiences shape an individual's perceptions and expectations about the chosen occupation.
- Cultural and social context - the cultural and social context can influence the prestige and attractiveness of the profession and the formation and shaping of professional identity
- Personal relationships - inspiring role models, supportive people, and mentors can help individuals develop, strengthen, or change their career identity.

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THU Thu Htike

Education Disruptions in Conflict Zones: Impact on Internally Displaced Children: Challenges and Solutions

Introduction

The Commission on Human Rights adopted the guiding principle (1998) of Internally Displaced People (IDP) as - "A person or groups of persons who escape or leave their homes or places of residence to avoid the consequence of armed conflict, situations of generalized violence, violations of human rights or natural or man-made disasters, and who have not crossed an internally recognized State border" (Deng, n.d.). Internal displacement is a controversial topic caused by conflicts, instability, breaches of human rights, natural catastrophes, and climate change (cited in Nemine & Zalacro, 2019).

According to a UNHCR study, the military coup in Myanmar in October 2023 resulted in the displacement of about 197500 people and significantly impacted schooling at all levels. In protracted conflict settings, the vital role of humanitarian aid in providing education underscores the risk of enduringly adverse consequences for the prospects of school-aged children. Prolonged conflicts with inadequate access to education can have a lasting, detrimental impact on these children's future outcomes. The effect of that insufficient education can have a significant negative impact on the characteristics of the post-conflict society (UNICEF, 2018).

The 1948 Universal Declaration of Fundamental Human Rights (UDFHR), the 1951 Convention on the Status of Refugees (CSR), and the Convention on the Rights of the Child, 1989 (CRC) all agreed that all children, regardless of their situation, had the right to free and compulsory education as well as an emergency education (Olaitan, 2016). Following Principle 23's guarantee of equal and complete participation for women, IDPs have a right to free and obligatory elementary education. One of the rights to education of all pupils and also similar to human rights, Principle 23 also specifies that education and training programs should be made available to IDPs. (Deng,1999).

The Sustainable Development Goals (SDGs) adopted globally emphasize ensuring that education is accessible, equitable, and high-quality. More precisely, SDG goal 4.1 sets forth a mandate for nations to grant every child, regardless of gender, the opportunity to receive primary and secondary education, ultimately resulting in substantial and meaningful educational achievements by 2030 (UNESCO, 2017). The National Authorities are responsible for assisting and safeguarding IDP children and youth, as well as their rights to education, security in the classroom, and post-conflict life, per the Guiding Principles for Internal Displacement (1998).

This guiding principle also takes into account a variety of practical purposes for realizing the educational objectives of pupils in IDP camps. Additionally, following principle 23 (2), education should respect children's culture and identity, language, and religion following the CRC clauses: articles 28 (consistent with and in compliance with the child's human dignity) and 29 (respect for the child's parents, culture and identity, language, and values). Education should strongly emphasize fostering tolerance and respect for individuals of all sexual orientations, ethnicities, and religions, as well as those of indigenous origin. Articles 24 (1) of Geneva Convention IV and 27 (2) of Protocol I convey similar views on the need for education for children who have been internally displaced (Convention on the Rights of the Child, 1989).

The quality of education has been adversely affected by military rule in Myanmar dating back to 1962. During this period, the regime enforced a centralized education system, resulting in limited access to education and a high dropout rate, primarily due to a prolonged neglect of compulsory primary education. Inclusive education was notably absent, leading to challenges for marginalized groups, including children with disabilities, those from economically disadvantaged backgrounds, children residing in conflict-prone regions, and linguistic minorities in their pursuit of education. The education

system has rigidly adhered to a uniform curriculum and standardized textbooks, a practice that persists. Additionally, the curriculum needs to prioritize the development of practical skills relevant to the workforce and social engagement. Indigenous languages and local cultural knowledge have been excluded from the educational framework, aligning with the regime's language policy, which prioritizes the Burman culture to the detriment of the languages and traditions of other indigenous communities, essentially pursuing assimilation under the banner of national unity (Lwin, 2007). The system does not meet human rights obligations regarding the right to education.

Regarding accessibility, extra tuition and other hidden education costs restrict impoverished families from enrolling their children in schools. In addition, there needs to be more competent teachers and suitable infrastructure. Children from disadvantaged backgrounds, such as those with disabilities and those living in war areas, cannot access the educational system. Children from ethnic minorities find the material in school textbooks insensitive to their culture. Education cannot adapt to the changing demands of society, especially the skills required for the workplace (Lwin, 2007). The most pressing issue is ensuring that every student has equal access to education. The lives of displaced children and teens are affected in various ways, both immediately and over time. Individuals internally displaced are likely to experience significant socioeconomic issues in the neighborhood. Individuals fleeing war zones are likely to be the direct victims of the conflict, such as victims of rape or sexual assault or those who have been threatened with death. These experiences can cause psychological trauma. These psychological wounds can impact society, people's futures, and how they reconstruct their lives (World Bank, 2016).

The attainment of meaningful learning is a crucial aspect of development, and one's deficiency in the requisite knowledge and skills essential for effective participation in society contributes to the definition of poverty (Lewin, 2015). Educational systems typically aim to offer each student an "opportunity to learn," ultimately enhancing well-being and economic prospects. Enhancing the quality of student learning and mitigating the potential impacts of factors contributing to inequality represent a primary focus for policy intervention. The ability to oversee school quality, educational processes, and outcomes, alongside allocating educational resources and governance, remains at the core of educational planning and management in developing nations (Lewin, 2015). However, existing policy interventions have often concentrated on addressing supply-side factors, such as the shortage of qualified teachers and textbooks, which are comparatively straightforward to plan and implement. However, the effectiveness of these policies substantially relies on how they are complemented by addressing the evolving characteristics of demand-side inequality factors. Demand-side factors, including individual and household attributes of students, such as poverty and child labor, wield considerable influence in moderating the value of education and the effectiveness of supply-oriented educational policy planning interventions. As the scale of these inequality factors varies both geographically and within individual communities, the policy response may need to adapt accordingly.

Consequently, monitoring learning outcomes as influenced by spatially distinct inequality factors can assist in pinpointing where and how specific policy interventions can best yield optimal results. Hence, in alignment with Lwin's (2015) perspective, sustaining access to meaningful learning is a critical driver for long-term advancements in productivity, the reduction of intergenerational poverty, the empowerment of women, and overall reductions in societal inequality. Should the system fail to ensure equity in the quality of education, particularly at the secondary level where exclusion is most prevalent, there exists a risk of perpetuating inequality and impeding progress toward achieving sustainable development goals, as highlighted in the "Mapping Inequality" context. Given that these factors often interconnect and contribute to multiple deprivations among students, a comprehensive policy response may be imperative to augment the value of education and improve learning outcomes, especially for students from lower socioeconomic backgrounds (Lwin, 2015).

Methodology

This paper draws on the political context of Myanmar and access to education of students in Internally Displaced People (IDP) Camps. The paper used a desk study review methodology where relevant

empirical literature was reviewed. It involved a review of studies on accessing formal education for students in IDP Camps by identifying all articles based on the equal and inclusive education of students in IDP Camps using data from multiple sources. Typically, the paper's title, abstract, and keywords were searched on articles that dealt with students' access to education in these IDP Camps, narrowing the literature between 2017 and 2023. These articles were divided into top keywords (Access to Education, IDP Camps, students, formal education, inclusive Education, Myanmar). The study adopted a descriptive research design. The sample size was obtained using purposive and snowball sampling techniques.

Myanmar's legal framework relating to children

Since the military coup on February 1, 2021, the junta's activities have violated several international agreements to which Myanmar is a party. As part of the military's extensive and organized assault on the people of Myanmar, such violations against children were probably crimes against humanity. The 2019 Child Rights Law is one of many domestic laws in Myanmar that protect children that the regime has broken. Less than a year after the Convention on the Rights of the Child came into effect, Myanmar joined it. A key international human rights convention, the Convention on the Rights of the Child, secures state parties to defend children's civil, political, economic, social, and cultural rights. The Convention requires states parties to respect, uphold, and implement children's rights to life, security of person, nationality, instruction, health care, food, shelter, and a minimal standard of living, as well as their freedom of movement, expression, information, assembly, and association, among other rights. State parties must prevent child exploitation and abuse and prohibit abduction and torture (UN et al., 2022).

International criminal law may consider child abuse a war crime if it violates international humanitarian law. Similarly, under international criminal law, specific child rights violations that occur during a widespread or organized attack on a civilian population are considered crimes against humanity. The 2019 Child Rights Law, which superseded the 1993 Child Law, was adopted by Myanmar's parliament (UN et al., 2022).

The Child Rights Law improved on its predecessor by giving children more significant safeguards. According to the new law, a child is anybody under 18 years old, per the Convention on the Rights of the Child. Military and junta officials have routinely disregarded child legal protections, including those provided by the Child Rights Law, since the coup. The Child Rights Law also protects children affected by armed conflict, attacks on schools and hospitals, and obstruction of humanitarian aid (UN et al., 2022).

Military Coups in Myanmar

Myanmar has had four military takeovers since its independence in 1948: in 1958, 1962, 1988, and 2021. The political instability that Myanmar has been experiencing over the past few years has had a significant influence on the country's educational system. Because many citizens fled the settlements throughout the 60-year civil war, the number of internally displaced people (IDP) is rapidly rising. Several individuals engaged in the Civil Disobedience Movement (CDM) after the military coup of February 2021 and refused to hand over control of the educational system to the military government. Armed ethnic groups, tens of thousands of teachers around the nation taking part in CDM, and young people from various academic specialties work to open schools for local children who are refusing to attend classes under the military administration. Education is an essential aspect of how they will live after the revolution. Therefore, children must be given their absolute fundamental right to an education. They are all entitled to high-quality education, which may be a unique, lifelong process. These students can play critical roles in post-revolutionary nation-building and rehabilitation if they receive a high-quality education. (Lwin, 2019).

Impact on Education by Military Coup

The military takeover has severely harmed the right of children to education. After the shutdown of schools in 2020 and 2021 due to the COVID-19 epidemic, many children were stopped from returning to school because of the disorder and violence caused by the coup. As they have not received formal education for the past two years, thousands of children have little prospect of returning to school. The Ministry of Education removed more than 125,000 primary education teachers nationwide in May 2021 due to their involvement in the Civil Disobedience Movement (CDM).

As a result of their involvement in protests, the Civil Disobedience Movement, or other forms of opposition to the junta, hundreds of teachers are now held as political prisoners and accused of major crimes. Also, a significant barrier to keeping children out of the classroom has been safety concerns. Safety concerns are the primary justification given by parents for not enrolling their children in school, according to those working in the education system (UN et al., 2022).

The Global Coalition to Protect Education from Attack (GCPEA) documented over 450 incidents of state armed forces using schools, universities, and educational facilities for military purposes in Myanmar in 2020 and 2021, the majority of which took place after the military coup on February 1, 2021. According to GCPEA data, reported attacks on schools rose from around 10 in 2020 to over 190 in 2021. Moreover, endangering the safety and security of education, Myanmar's military often used schools and colleges. Armed forces and organizations frequently harm schools or universities while using them as a base or for other military objectives (GCPEA,2022).

Myanmar's students, parents, and educators are now facing a hostile educational environment due to the widespread targeted attacks on and military use of schools, universities, and educational infrastructure. As a result, it has become more difficult for them to make safe decisions for their learning, children, and jobs. Concern must be expressed over the immediate and long-term effects of this severe disruption of learning and its broader implications for instruction and learning in all levels of education, from pre-kindergarten to higher education (GCPEA, 2022).

Facing massive challenges, it has little hope of ensuring access to "inclusive and equitable quality education and promoting lifelong learning opportunities for all" under the current political situation in Myanmar.

The Effect of Conflicts on Access to Education of Students in Challenging Areas and Possible Solutions

Several obstacles stand in the way of internally displaced pupils' access to education. They face restrictions on security, discrimination, and limited infrastructure and resources. According to the UNHCR study, the accessibility and opportunity of schooling vary amongst IDP camps based on the ease of entry for humanitarian aid. Some regions still await educational infrastructure, while others rely on limited humanitarian access. Many learning opportunities are lost due to a lack of infrastructure, capacity, and resources, including sufficiently prepared instructors and curricula designed to meet the requirements of displaced children. In displacement scenarios, teacher shortages are typical, and guaranteeing their supply, retention, and motivation requires fair and consistent pay (UNESCO, 2019).

The conflict's violence has impacted children's ability to receive an adequate education, and several other shocks related to the conflict, such as the suspension of teacher salary payments, the inability to purchase instructional materials, and the significant rise in the percentage of financial struggling households (OCHA, 2020).

Junior secondary school students internally displaced in Maiduguri's IDP camps confront issues with their education, health, and necessities. The issues relocated junior secondary school students faced varied significantly by gender (Bukar, 2021). According to Qayumi's 2020 study on "Education Need to Internal Displacement Children," Afghanistan's parents and children are less educated than they should be due to 40 years of conflict. Education was not seen as one of the population's top needs, particularly for those uprooted from their homes for security reasons and now living in or close to Afghanistan's major cities in inhumane conditions (Qayumi, 2020). The survey by Qayumi found that Afghan children who were internally displaced had the following educational needs: According to an assessment poll, most kids need to get more comfortable with technology but are eager to learn from it. It is established that Afghan youngsters who have been internally displaced are eager to attend school. Supporting these kids is crucial to closing the school gap and avoiding the societal repercussions that will result from it (Qayumi, 2020). Children who are not in school are deprived of opportunities for educational growth and other essential advantages. According to Bukar 2021's report, Issues of Internally Displaced Junior Secondary School Students in Internally DP Camps, Maiduguri Metropolis,

female students have higher psychological issues than male students. The Counselling Association of Nigeria (CASSON).

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Children's educational paths are disrupted by displacement, and they require assistance to return to formal education. In this regard, offering access in the form of school enrollments is only the starting point of inclusion. During their displacement, many IDPs lose their documents or have them taken; without these, displaced children would not be able to enroll in school. It may be challenging to get new documents, and it may even be risky for individuals who must travel back to their origin as part of the process, such as transcripts and diplomas, which can prohibit relocated students from signing up for state examinations. IDPs from minority groups appear to experience discrimination in this sense. Schools must also adjust to the demands of their new students. Since those minorities and indigenous communities are disproportionately impacted by relocation (UNESCO, 2019). Children severely traumatized by armed conflict have trouble integrating with other displaced people in the camps and outsiders and may show signs of psychiatric instability. Children who are denied an education at the most crucial time in their development run the risk of developing into risks to society as they mature without receiving the formal education they need to contribute positively to their community (Maigari, 2022).

In the context of Timor-Leste, a study by Justino et al. (2013) reveals that the impact of conflict on the school attendance of internally displaced girls, though initially hostile, did not have a lasting effect on their completion of primary school. Girls exposed to violence were likelier to complete primary school than those who had not experienced such exposure. This favorable outcome was primarily attributed to the swift reconstruction of the education system in areas affected by violence, a reconstruction effort supported by the international community and the government. Furthermore, this endeavor was characterized by a gender-specific focus on improving educational outcomes for girls. Conversely, the influence of violence on boys' educational outcomes persisted over time, likely due to their tendency to work for longer hours in the years following the conflict.

Bridging the Gap: Inclusive Education Systems and Possible Solutions for Students in Refugees and IDP Camps

In Turkey, providing education to Syrian refugees initially involved temporary education centers parallel to the national educational system. However, in 2014, the government introduced inclusive education policies for Syrian refugees, reallocating educational resources to areas with a significant concentration of refugees. Supported by the European Commission and UNHCR, Turkey implemented remedial and accelerated learning programs, offered language support, and engaged Syrian teachers as voluntary advisors. According to Tumen (2019), approximately 320,000 Syrian children of primary school age, constituting 96 percent of the refugee children, have been successfully enrolled in schools in Turkey. This enrollment rate surpasses both the current primary school enrollment rates in Turkey and the pre-war enrollment rates in Syria.

Additionally, as demonstrated in Timor-Leste, inclusive education policies and rapid reconstruction efforts in conflict-affected areas can serve as a model for supporting the education of internally displaced, where the impact of conflict on school attendance and completion can differ between genders, highlighting the importance of addressing these disparities. Ensuring access to quality education is vital for their long-term well-being and the stability of their communities. Similarly, adapting inclusive policies and mobilizing resources, as seen in Turkey's response to Syrian refugees, may offer valuable insights for addressing the education needs of internally displaced populations, emphasizing the importance of providing language support, remedial programs, and adequate teacher support to promote educational attainment among IDP children.

Increasingly, national inclusive education systems are acknowledged as a sustainable, long-term solution to refugees' educational challenges. Dryden-Peterson (2019) outlines the compelling factors contributing to this recognition, including the protracted nature of conflict and displacement, the imperative emphasis on providing access to quality education, the coexistence of refugees within urban areas alongside host nationals, the role of education in fostering social cohesion, and the recurring deficits and unpredictability in funding. While international policies and frameworks, such as the 1951 Convention Relating to the Status of Refugees, the 2016 New York Declaration for Refugees and Migrants, and the Global Compact for Refugees, firmly establish the legal right to education for refugees, a significant gap exists between these legal mandates and the actual provision of education on the ground. This gap is influenced by factors like the ratio of Internally Displaced Persons (IDP) children to the local population, the capacity of host nations to expand their public education systems rapidly, and the substantial variations in legal and institutional arrangements.

In parallel, accelerated learning programs (ALPs), which compress several years of education into a condensed timeframe, are particularly important for children whose schooling has been disrupted by conflict or crisis. ALPs are implemented in various countries, primarily through support from organizations like UNHCR, UNICEF, UNESCO, Save the Children, NRC, and War Child Holland. Burde et al. (2019) demonstrate that ALPs significantly positively impact Afghanistan's school enrollment and learning outcomes. Notably, they explore the integration of ALPs into national education systems by transferring the implementation to local institutions at the village level. Their findings indicate that the improvements in learning outcomes and school enrollment were marginally less effective than when delivered by international NGOs, yet notably more cost-effective. Adopting ALPs within national education systems necessitates well-coordinated support and capacity building within national, provincial, and district government authorities, which can be initiated with startup funding.

In cases where education systems are overburdened and expanding public systems to reach all IDP or refugee children would be an extensive undertaking, educational technology emerges as a potential solution to enhance the quality and effectiveness of teaching. Brown et al. (2020) reveal the substantial positive effects of a digital game-based learning program, *Cannot Wait to Learn (CWTL)*, on mathematics and Arabic literacy competency, as well as psychosocial well-being among children in Sudan, when compared to the state-provided education program for out-of-school children. Menashy and Zakharia (2020) emphasize the role of technology interventions as a promising avenue for refugee education. Moreover, effective educational technology should be purpose-driven, align with educational objectives, contextualize content according to local curricula, ensure offline accessibility, accommodate intermittent access to electricity, and provide adequate training for national education officers and facilitators.

Literacy outcomes among refugee children exhibit variations can also be influenced by several factors, such as,

- their country of origin,
- the language of instruction employed in their school,
- the languages spoken within their homes,
- the children's outlook regarding a potential return to their country of origin.

For instance, Somali refugees achieved higher literacy scores than South Sudanese refugees, which could be attributed to their varying durations of stay in Kenya and differing exposure to education in Kenya, including English. Furthermore, refugees' expectations for their future influence their early literacy development. Consequently, there is a pressing need to emphasize enhancing learning outcomes for refugee children, moving beyond mere considerations of their access to education. It requires recognizing their unique and diverse learning requirements, which may only partially be met by the national education system, and addressing the challenges of their marginalization. To better tailor policy responses and instructional strategies for students from different backgrounds, it is imperative to understand their educational backgrounds, their parents' educational histories, and the means by which they are exposed to the language of instruction. For Internally Displaced Persons (IDP), these insights underscore the importance of recognizing the diverse needs of IDP children and tailoring

educational interventions to their unique circumstances, including their educational backgrounds and linguistic exposures (Piper et al.).

Providing education to Internally Displaced People (IDP) children presents a formidable challenge in many regions, mirroring the difficulties encountered by their refugee counterparts. These children often confront significant barriers when seeking access to quality education. Variations in age requirements for compulsory education, reminiscent of those observed in European countries, can hinder their ability to pursue post-compulsory education or vocational training. Although efforts are made to include IDP children in the education system within a few months of their displacement, the quality of education they receive is notably inconsistent. Resource constraints and logistical difficulties frequently contribute to this disparity. In some instances, IDP children may find themselves attending temporary education centers that follow curricula from their places of origin, posing a hindrance to their integration into the local educational system. Language barriers further compound these challenges, necessitating the implementation of welcome or integration classes. The repercussions of segregating IDP children can be severe, as it often results in their restricted access to quality education, consequently affecting their integration and prospects. Effectively addressing these issues, encompassing age requirements, access to quality education, language barriers, and curricular disparities, is crucial for ensuring IDP children's successful integration and prospects, enabling them to make meaningful contributions to their communities.

In the case of Internally Displaced Persons (IDP), it is essential to recognize their challenges in accessing quality education and tailor interventions accordingly. The issues of age requirements, educational quality, language barriers, and curricular discrepancies must be addressed comprehensively to ensure that IDP students can access and benefit from education effectively, contributing positively to their communities.

The Assessment of Learning Outcomes and Social Effects of Community-Based Education in Afghanistan (ALSE) project constitutes a comprehensive, multi-year investigation that utilizes a mixed-methods approach and randomized controlled trials to assess strategies to enhance Community-Based Education (CBE) in Afghanistan. CBE is a service delivery model designed to improve access to and quality primary education in remote or hard-to-reach areas. The ALSE project evaluates the outcomes of the Community-Based Education Enhancement Program (CBEEP), implemented by two non-governmental organizations, CARE Afghanistan and CRS Afghanistan, across 195 villages in six Afghan provinces. The initial phase of ALSE, conducted from 2014 to 2015, revealed positive impacts of CBE. It was found that CBE significantly increased the attendance of girls aged 6-11, with a notable 16-percentage point growth, from 58 percent in villages without CBE classes to 74 percent in those with such classes.

Similarly, boys in the same age group experienced an 11.7-percentage point increase in attendance, rising from 69 percent to 80 percent. Furthermore, CBE classes contributed to improved learning outcomes for children, with an increase of 0.28 standard deviations, consistent for both boys and girls. The community-led administration of CBE under the sustainability model demonstrated remarkable efficacy in promoting access to education and enhancing children's learning outcomes, surpassing expectations despite cost differentials. Notably, the sustainability model exhibited potential advantages regarding girls' education attendance, indicating its potential to be more beneficial. Providing access and learning opportunities for both genders appeared more effective for girls, although the difference did not reach statistical significance. These findings underscore the potential of CBE and its sustainability model to positively impact education access and outcomes, particularly for girls in Afghanistan. These insights can offer valuable lessons for improving education access and quality for Internally Displaced People (IDP) students facing similar educational challenges.

Support of the International Community to the Education of Students in IDP Camps

By education needs of internally displaced children in Afghanistan: A need Assessment survey, children in Afghanistan who are internally displaced have educational needs. According to an assessment study, the Afghan government does not actively offer education for these kids but funds organizations that do. The survey's findings indicate that while the Afghan government does not actively provide for these

children's education, it is strongly supportive of NGOs that do. The study also reveals that this area may have more extensive and regular NGO activity. To end illiteracy among confined children and internally displaced children, the government, NGOs, and companies must work together (Shahnaz et al., 2020). According to the Quayami 2020 study, Afghan children who have been internally displaced are eager and ready to return to school, and it is crucial to help them right away to close the education gap and avoid the social repercussions that arise from it (Qayumi, 2020).

As a result of the study, Sarkinfda, 2022 noted that policies and mechanisms in place for education that guarantee displaced children's safety and access to learning opportunities would probably help them become more resilient and able to cope with trauma and adversity. The study found that the respondents' socioeconomic and educational services and the educational facilities established at the camp had stayed the same. The children of IDPs should have access to educational resources to improve their educational possibilities (Sarkinfada, 2022). To foster confidence and trust, there should be efficient coordination between the security forces, the government, non-governmental organizations (NGOs), residents, and foreigners. Education for communities that have been relocated has become less effective due to the misperception of identity politics (Shanks, 2019).

Conclusion

In any nation, implementing policies and programs to support the education of internally displaced children is not just a matter of choice but an ethical imperative. The needs of displaced children and their host communities can be met through education, a powerful tool that not only imparts knowledge but also strengthens the social fabric, fosters understanding, and cultivates unity.

Internally displaced children living in camps must have unequivocal access to the nation's educational systems. It is a matter of fundamental human rights that, as citizens or permanent residents, all schools and alternative education programs open their doors to every student without discrimination. The inclusivity of education should be non-negotiable. To ensure the successful integration of displaced children into the education system, teachers must be adequately trained to navigate multilingual classrooms and address the trauma many of these children have experienced. Specialized support should be available to displaced students who require it, including language and catch-up lessons. Informal schooling is a temporary solution at best, and the international community increasingly recognizes the importance of transitioning displaced children into formal educational systems. The Geneva Call's Declaration of Commitment for the Protection of Children from the Consequences of Armed Conflict plays a vital role, particularly regarding the safety of educational spaces.

Armed organizations should sign and diligently implement this declaration, ensuring that education is safeguarded from the impacts of conflict. Humanitarian organizations offering education to vulnerable children should be granted access by armed actors, fostering an environment where learning can thrive amidst adversity. The disruption of schooling over the past two years has taken a toll on the lives of countless children. This disruption threatens to have long-term consequences on the economy and society. It is crucial to acknowledge that children from marginalized groups and ethnic minorities have faced systemic disadvantages within the educational system. A significant barrier to their learning experience is the need for mother-tongue instruction in public schools. Addressing these issues is imperative for the overall betterment of society. Children deprived of education are more vulnerable to mental and emotional distress. This vulnerability may lead them to engage in violence to resolve interpersonal and political conflicts.

Additionally, they are more likely to face lower earning potential and increased exposure to abuse and exploitation, including child labor, early marriage, and human trafficking. These concerns, if not addressed promptly, will continue accumulating, resulting in the loss of vast human potential and compromising the future of nations. In light of these challenges and the complex interplay of factors that affect the education of internally displaced children, it is incumbent upon all stakeholders in the field of education to take these considerations seriously. The primary goal should be to uphold the

dignity, capabilities, and well-being of all individuals residing within the country. It aligns with the fundamental objective of education, as articulated by UNESCO in 2015, which is to empower individuals to build a better future and contribute positively to their communities. Forced displacement presents unique educational obstacles for internally displaced individuals, refugees, and host communities. The impact of displacement on educational access and outcomes can differ among these groups, necessitating well-coordinated government and the international community responses. The most sustainable and cost-effective solution to education-related challenges arising from forced displacement is establishing inclusive national education systems that can effectively integrate forcibly displaced populations. While the road ahead may be fraught with challenges, promising opportunities exist. Civil society education groups, indigenous communities, and local organizations are actively advocating for change and seeking to provide quality education to marginalized and displaced children. The UN Declaration on the Rights of Indigenous People (UNDRIP 2007) offers a robust framework for ensuring the rights of indigenous peoples to establish and oversee their educational systems, preserving their native languages and cultural traditions.

Moreover, as part of the Sustainable Development Goals, the global commitment to education for sustainable development provides an overarching framework to ensure inclusive, high-quality education and lifelong learning for all. As nations work toward these goals, there is hope that access to education for all, regardless of their circumstances, will be realized, contributing to a more equitable and prosperous future. In conclusion, the challenges associated with education for internally displaced children are complex, but the potential for positive change is vast. As stakeholders collaborate and commit to providing equitable, inclusive, and quality education, they pave the way for restoring hope and realizing the full potential of displaced children, creating more vital, more resilient communities and nations.

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Dénes ZARKA

Digital-Reskilling at Universities by introducing smart catalogues



Rationale of D-Reskill@U project

The "Digital-Reskilling at Universities (D-Reskill@U)" project, coordinated by Sorbonne University and of which the Budapest University of Technology and Economics is a partner member, is presented as a response to the changes, digitalisation and challenges that European training institutions are facing, specifically in the field of higher educational, digitalisation rapid AI development and employment crisis on the job market.

D-Reskill@U recognizes that the workforce needs effective up/reskilling and career guidance tools to enable them to enhance their employability in a period of rapidly changing work environment and innovative patterns. The solutions envisaged must be as effective and affordable as possible (to increase social inclusiveness). The project will provide European higher education institutions with guidelines for an original online further educational and lifelong learning offer at the post-graduate level for the reskilling and up-skilling of the workforce (manpower). To achieve the most in-depth and at the same time the most practical vision, the project collected a consortium of partners with different profiles, 2 research-intensive universities (Sorbonne Université and Università di Milano), a technical university (Budapest University of Technology and Economics), a distance-learning university (Universitat Oberta de Catalunya), together with a leading-edge EdTech company (Bullini Enterprise) in the field of digital HE guidance, and a non-profit foundation (Fondation Maison des Sciences de l'Homme) with expertise in digital transformation of higher education and dissemination.

Motivation

The D-RESKILL@U project is directly linked to the "European Skills Agenda" which prioritizes equity and inclusivity as a critical instrument of socioeconomic development and excellence. The Skills agenda assumes that public universities can play a central role in providing innovative continuous professional development (CPD) and lifelong learning (LLL) pathways that support targeted employability in crucial economic sectors. D-RESKILL@U is essential by providing a career guidance strategy for a CPD and lifelong learning pathway. The project is accessible, readily applicable, and responsive, thanks to its alignment with the European Skills/Competences, Qualifications, and Occupations (ESCO) database and its use of advanced digital tools for career guidance and support.

The digitalization of public organizations and private enterprise has driven economic growth across all sectors. In this context, CPD and lifelong learners need insights into the new and different skills they will need for career growth. According to a report from Gartner (2020), digitalization-driven skills shifts can be described by three central tendencies:

- New skills are emerging, driven by accelerating technological advancements. These skills include new-in-kind skills such as data analytics for business intelligence and blockchain.

- Skills are evolving: As companies continue to embrace big data, employees with statistics and analytics backgrounds who have applied their skills through more legacy programs like Statistical Package for Social Scientists (SPSS) and Statistical Analysis System (SAS) are starting to shift toward big-data oriented tools like Python and Tableau. In this regard, Deming and Noray (2020) argue that "the overall rate of skill turnover is high. Among vacancies posted by the same firm for the same six-digit occupation, about 29% contained at least one new skill requirement in 2019 that was not required in 2007".
- Yesterday's skills are expiring: This category includes skills that technology can perform faster and cheaper than humans. Examples range from cold calling to manual sorting to designing for print advertising — and could soon include a range of knowledge-economy skills displaced by artificial intelligence and machine learning.

Objectives

The D-Reskill@U project took the "European Skills Agenda" head-on by prioritizing equity and inclusivity as critical instruments of socioeconomic development and excellence. It postulated that public universities could be crucial in providing innovative professional further educational development (CPD) and lifelong learning (LLL) formulae. D-RESKILL@U has been vital in this regard by providing the strategy for a CPD an LLL approach that is accessible, readily applicable, and responsive, thanks to its compliance with the European Skills/Competences, Qualifications, and Occupations (ESCO) database and its use of advanced digital tools for career guidance.

The three following objectives illustrate the highlights of the project and its strengths:

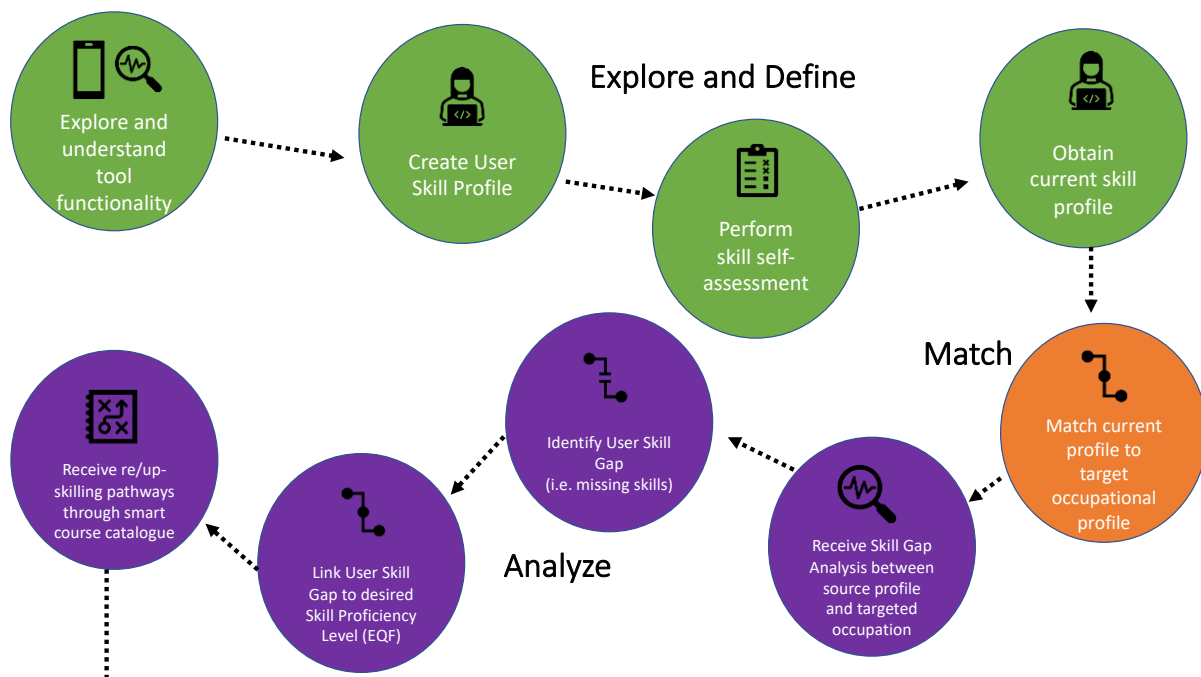
- The use of digital technology to make CPD and lifelong learning as inclusive as possible in the context of the current socioeconomic crisis triggered by the health crisis and its aftermath.
- The mock-up of an innovative learner-centered curriculum plan linked to the evolution of the European labor market and providing the methodological, technical, and strategic guidelines for implementing it.
- The maximization of impact via an active dissemination via Masterclass and Leadership School events to ensure visibility and continued sustainability.

Activities

Pedagogical Innovation for Lifelong Learning in Higher Education

A set of guidelines is implemented to determine the skills of a CPD and lifelong learning offer formulated to the needs of end users and to evaluate the corresponding micro-credentials concerning the European Credit Transfer System (ECTS) scale. In addition, the guidelines for constituting the "smart" Digital Catalogue are developed and provided. The skills gap analysis used analytical methods already implemented in our four universities, demonstrated in a pilot in the chemistry masters at Sorbonne Université, for example.

These catalogs are "smart" and linked to ESCO's ontologies, and they can feed digital tools that will guide the learner in building a learning pathway (see PR2) leading to ECTS credits. This catalog is sorted and marked by "keywords," allowing for its mapping to follow the ontologies of the European classification of Skills, Competences, Qualifications, and Occupations (ESCO) database (that is in open license). The catalog data (course name, skills, and training qualifications) are enriched by relevant semantic metadata and items, i.e., centers of interest, psychometric relevance and adequacy, and professional sectors). This metadata is of great value when users go through the self-positioning tests integrated into the software.



Modelling the Career Guidance Software

The software design is innovative in several ways. First, the Self-Positioning and Curriculum Building software tools integrate the database framework and the ontology of the European Skills/Competences Qualifications and Occupations (ESCO) in the same way as the "smart" catalog. Dynamic and progressive software features simulate curricular and educational outcomes (in particular, the earned credits) through a personalized user experience. In summary, the curriculum-building tool allows trainees not only to define a curriculum adapted to their skills and interests but also to count and calculate university credits while creating a study path. It is expected that digital tools will boost interest in our lifelong learning offers, as they will offer a unique means for effectively strategizing towards professional placement. Finally, as self-positioning practices are relatively common in the business world and, therefore, already familiar to the target audience, DRESKILL@U harnesses this effective practice that will become increasingly necessary in future university planning more in tune with individual learner needs.

The mass spectrometry example

CPD and LLL courses are already available at our universities. As a working example, we took two existing offers in mass spectrometry. These can be introductory (level 1) or more advanced courses (level 2) made over 2 or 3 days, with both "theory" and "practical" included (typically 14 hours). (for 1 ECTS = 25 hours, it is typically 0.5 ECTS). Mass spectrometry is inescapable in the training of an analytical chemist, and it exists in the ESCO base as "the analytical technique that makes use of the measurements performed at gas-phase ions and the ratio mass-to-charge." It follows the hierarchy: knowledge >natural sciences> mathematics and statistics>physical sciences>physics>mass spectrometry. It is declared optional for a chemical technician but needs to be included in the optional skills/competencies and knowledge of the targeted analytical chemist, while chromatography is!

Figure 1 This figure shows in the same table, a column with the proficiency levels required of a specific occupation (should be filled by industry experts) and two columns with the proficiency levels of skills and knowledge provided by trainings (should be filled by teachers).

| | IN ESCO/ NOT IN ESCO | skill/kw | Industry Ready skill proficiency level for Analytical Chemist | LA SPECTROMÉTRIE DE MASSE COMME OUTIL ANALYTIQUE Lev1 | LA SPECTROMÉTRIE DE MASSE COMME OUTIL ANALYTIQUE Lev2 |
|--|-------------------------|----------|---|--|--|
| use chromatography software | Available | skill | 3 | 0 | 2 |
| gas chromatography | Available | kw | 3 | 0 | 3 |
| apply liquid chromatography | Available | skill | 3 | 0 | 3 |
| gel permeation chromatography | Available | kw | 2 | 0 | 0 |
| high-performance liquid chromatography | Available | kw | 2 | 0 | 3 |
| laboratory techniques | Available | kw | 3 | 1 | 3 |
| conduct soil sample tests | Available | skill | 3 | 1 | 3 |
| mass spectrometry (fundamental principles) | Available | kw | 4 | 3 | 4 |
| prepare chemical samples | Available | skill | 2 | 1 | 3 |
| ionization methods | N/A | kw | 3 | 3 | 4 |
| vibrational spectroscopies (RAMAN, Infra Red..) (fundamental principles) | N/A | kw | 3 | 0 | 0 |
| apply vibrational spectroscopies methods | N/A | skill | 3 | | |
| nuclear magnetic resonance | N/A | kw | 2 | 0 | 0 |
| UV-Visible spectroscopy | N/A | kw | 3 | 0 | 0 |
| XPS | N/A | kw | 2 | 0 | 0 |
| Photo luminescence | N/A | kw | 2 | 0 | 0 |
| solid NMR | N/A | kw | 3 | 0 | 0 |
| X-rays diffraction | N/A | kw | 2 | 0 | 0 |
| x-rays photo electron spectroscopy | N/A | kw | 2 | 0 | 0 |
| electronic microscopies | N/A | kw | 2 | 0 | 0 |

Training program on Innovations in digital Lifelong Learning and career guidance

Through this training (held in Barcelona), Leaders, project partners, industrial partners, and faculty members could learn how to divide their course offerings into micro-credits, whose summation may lead to a degree. They will also learn how to clearly define their contents according to the "keywords" that allow mapping within the ESCO format to increase the reach of their offerings and boost their demand further. The training was continued with a Leadership School in Budapest to enhance our invitee's management and leadership skills.

Project results

The production of **guidelines** aims at defining skills-driven contents by skills-gap analysis and defining micro-credentials according to the analyzed Skills. As an application, a Smart Catalogue of online offers was produced in the fields of data sciences and chemistry.

The **production of the dynamic mock-up of the career guidance software**, consisting of the digital implementation of the **intelligent catalog**, the specifications of the career guidance software (dynamic modeling and interfaces designing).

The training program on "Innovations in digital Lifelong Learning and career guidance" took place in the form of two workshops: MasterClass in Barcelona and Leadership School in Budapest, aimed at university staff and their governance (leaders), as well as University partners, alumni associations, and corporate representatives.

Other outcomes resulting from the project are the continued dissemination of the D-RESKILL@U methodologies at the global level, the creation of an online kit describing the methodologies, and the implementation of the career guidance software and its testing when supplementary funding is raised in the post-Erasmus+ period.

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Alfred HOLZBRECHER & Patrick BLUMSCHEIN

Teaching and learning in a globalized classroom - a concept for university didactics

Introduction and background information

In this paper, a concept will be outlined that was developed in the context of the JMC-FrEE project¹ in Freiburg. The aim was to show possible perspectives on how teacher education can find answers to the outlined challenges.

Future teachers have to learn how to create a "globalized classroom." This means they have to

- view the diversity of learners as a resource. Their socio-cultural background, their religious and ethical orientation, their gender, and the ability and willingness to learn have to be valued and didactically integrated when creating a teaching environment;
- develop some form of classroom management, i.e., conflicts have to be viewed in the context of a value-based teaching culture in order to find ways that help learning and development;
- support pupils with specific needs (linguistically, psychologically, concerning the content, etc.) in the classroom through relevant measures on the school level;
- offer integrated language education for all subjects by which all pupils are guided to learn the required age-appropriate technical language skills. It will contribute to learners' competencies in the language of schooling, which is the basic foundation to succeed in education;
- view "school in the world community" (Lang-Wojtasik 2008) as a curricular challenge. Therefore, teaching programs based on nation-states have to be changed to discover and encourage intercultural and global perspectives;
- start from the individual perception and processing patterns of the pupils: How to deal with the experience of ambivalence becomes an integral part of the didactic planning related to the individual preconditions for learning.

More than ever for future teachers, the development of a scientific mind, relevant empirical qualifications, and a general state of curiosity are of fundamental importance, especially regarding

- the evaluation of the learning environment of individual pupils,
- the didactic transformation, i. e. the modeling of learning tasks. This should enable faster and slower pupils to realize their potential simultaneously and develop the desire to learn and achieve. They should become able to acquire step by step and "expansively" (Holzkamp) new competencies. In short, Teaching should be viewed from the perspective of the learners;
- the evaluation of the teaching results;
- the development of a professional self, i.e., to acquire the necessary basic knowledge to reflect the motives for choosing a teaching career and to communicate possible and necessary ways to become more professional.

In the field of university didactics, lecturers are confronted with this question:

How can they motivate students to turn their studies into personal and professional development?

If we want to encourage future teachers to view teaching from the learners' perspective, this should start at the university level. This means there has to be space for learning and experiencing by formulating stimulating tasks as a challenge to achieve expansive learning.

¹ Jean Monnet Chair Freiburg for European Education (JMC-FrEE), grant no ERASMUS+ 620072-EPP-1-2020-1-DE-EPPJMO-CHAIR

The concept

This didactic concept will expand the cultural-historical and ethnological foundation of intercultural education. This should avoid narrowing our look at migration questions and allow for discovering and strengthening intercultural perspectives in all subjects. Connecting general and subject didactic questions and widening the scope of didactic framework concepts (i.e., learning about sustainable developments, global learning, global citizenship education) allows an interdisciplinary approach and contextualizes individual teaching topics from a global perspective. The didactic concept for three seminars supports the development of a scientific mind and a generally inquiring atmosphere. It also enables students to create an individual focus.

Content of the seminars²

Seminar "Culture of eating (Esskulturen)" (winter term 2020/21, summer term 2021)

- Cultural history of a particular food in the historical context of conquest and colonialism.
- Abundance and hunger in the context of the European (and global) migration history.
- "Immigrated" food (spaghetti, kebab, tomatoes, potatoes, etc.) / "recipes travel "
- Looking for everyday elements: diversity, differences, and similarities in everyday life internationally (food, drinks, food taboos, housing, gender relations, family and social relations, special feasts, etc.)
- Constructing identity: What is "typical German," "French," "Turkish,"... cuisine? What are clichés and stereotypes? How flexible are "borders" and overlapping elements? What is being lost if you focus on the "typical" elements?
- Language images define our awareness: "Culture/s "as an object of inquiry/problems of the term "culture."

Seminar "' Far away and yet in contact' Travelling as intercultural encounter" (winter term 2021/22)

- Cultural history of traveling (discover, conquer, measure)
- Border experiences (travel interests, the self and the other, intercultural contacts)
- Travel literature (history, present, hermeneutics of understanding foreignness, travel stories: encountering strangers (communication-psychological perspective))
- Images of foreignness
 - travel photography
 - "aliens "(Science-Fiction films)
 - the foreign in the media (media analysis)
- Educational perspectives
 - School exchanges as an intercultural encounter, international work camps, youth travel: "sustainable traveling"?

Seminar "Images of foreignness and oneself" (summer term 2022; winter term 2022/23)

- Europe discovers and defines itself - renaissance: fears, awareness of crises, and patterns to deal with it,
- Antisemitism and racism in European history,
- Phantasies about the orient: positive "counter"-images,
- Racism in the media (e.g., stereotypes about Islam),
- Categories of identity construction: Personal and collective sense of belonging,
- Language. Power. Reality (framing, language images),

² Download of the study texts „Culture of eating“ and „Travelling as an intercultural encounter“ (in German): https://alfred-holzbrecher.jimdofree.com/schreibwerkstatt/bzw.https://www.ph-freiburg.de/fileadmin/shares/Institute/EW/Bildungsforschung/JMC-FrEE/Seminarplaene/Holzbrecher_Reisen.Gesamttext.web.erg.pdf und https://www.ph-freiburg.de/fileadmin/shares/Institute/EW/Bildungsforschung/JMC-FrEE/Seminarplaene/Holzbrecher_Esskulturen.Gesamttext.pdf The two texts "Reisen "and "Bilder vom Fremden "will be published in a study book (in German).

- SelfImages/BodyImages/WorldImages: perspectives of an intercultural didactic in the context of a global education,
- Create perceptions: education value of imagination/potential of intercultural education.

The seminars were held online during the COVID-19 pandemic, but where possible on a regular weekly basis "in person" with generally some 20 students. All seminars were part of the central evaluation process.

Didactic principles

Learner orientation

Teaching from the learners' perspective includes the development of a didactic concept that focuses on the age-specific situation of the pupils. Children and youth strive to develop a sense of personal and social identity. Students develop their professional identity by considering their choice of profession and their general view of the future. A learner-oriented didactic concept looks at the learner's general social and economic situation, including the relevant "power structures" and the images of oneself and the world in general.

The "Inter" matters

Intercultural learning should not be limited to migration or pupils with a migration history. Creating a model that hooks up with didactic framework concepts such as learning about sustainable developments, global learning, or global citizenship education is necessary. This concept focuses on the "Inter" – i.e., the dynamic space between oneself and the "foreign world." Reflecting on this offers the opportunity to become aware of one's perceptions of foreignness. This process of self-reflection is a central precondition for developing pedagogic professionalism (on the part of the students) and acquiring relevant intercultural competencies. This "Inter" can refer to foreign food and tastes (see "Culture of eating"). It can also refer to literature from authors of the global south and, of course, to the (inter)personal encounters with other people. The key is the reflection of the contact situation that can show itself as an actual conflict: In the teaching process, these critical incidents, i.e., conflict cases, are good learning opportunities because they deal with the space between teacher and pupil in all its dynamic, its multilayered background and the possible interpretation options (see below).

Habitus of "approaching"/"Approaching" as a mindset

University education is characterized by learning how to deal with complex matters, topics, and social problems methodically, using empirical examinations. In all this, the researcher/student must factor himself or herself into the equation as an observer. The concept of "researching teaching and learning" is valid for university education and later on when working as a teacher – as has been explained above. "Approaching" as a mindset is, in fact, a lifelong development task in intercultural encounters – no matter whether you are traveling, taking pictures, or trying to understand the way of living and thinking of the learners. Intercultural learning turns into a search, opening up new horizons of knowledge and understanding. At the same time, you understand better your perception patterns.

Cultural-historical and ethnological foundation

Looking for scapegoats, conspiracy theories and racist or antisemitic views has long been the European tradition. They accompany the search for identity in Europe, and their patterns are still influential today. They are embedded in our collective subconscious. These deeply embedded "frames" can only be tackled by becoming conscious by choosing a cultural-historical perspective. An ethnological perspective trains the eye to observe the relativity of how we view ourselves and the world around us. Intercultural and internationally comparative approaches enable us to show respect for other life designs and "foreign" ways of perceiving the world. They liberate the mind by showing that not only "foreign" but also our ways of perceiving, thinking, and acting are "relative." They always reflect the individual life experiences and are, therefore, artificial constructs that can be changed.

The form of learning defines the content

How we learn influences considerably how sustainable and personally important the learned matter will be. Does it make you curious or independent enough (self-regulating, expansive, or generative) to reach out for new horizons of knowledge and understanding? Suppose the learning environment and the didactic arrangements enable the learner to feel empowered in an appreciative learning culture. In that case, this desire to learn and achieve will become a lifelong habit. If learning is connected to pressure, fear, and punishment, then a habit of being curious is unlikely to develop. You are blocking out everything "new" because it will be regarded as potentially threatening.

Beyond traditional school and university didactics, other methods like creative writing, theatre and play pedagogy, and the use of media can increase the desire and willingness to learn. It can also turn learning into a creative search process. Suppose you want to get a clearer idea of your "images of foreignness and yourself" and to overcome ethnocentric and racist perceptions. In that case, the process of learning is always accompanied by emotions of fear that are deeply embedded in your psyche. Hence, it is all the more important to use teaching/learning methods that enable you to deal with these often diffuse perceptions. It would be best if you could articulate yourself, communicate with others, and develop new images.

A didactic concept for seminars

The study texts (see above) give an overview and are meant to introduce the topics. If internet sources were used when writing the texts, the students could turn to the learning platform used at our university to deal with those aspects and texts that seemed to be most interesting to them. In the seminar lessons, the relevant chapters were regarded as being read. Some aspects, which the students usually chose, were discussed in greater detail. This happened, if possible, by using creativity-supporting methods from the sphere of youth and adult education outside school: "Written discussion" on posters, symbolizing a thought (painting/drawing a symbol), commenting reading, picture analysis, exchange of personal experiences, creative writing about a picture or cartoon, cluster/mindmap to structure a complex topic, communication-psychological analysis of a critical incident, method "future workshop," etc.

Parallel to the seminar work, the students worked in small groups on "didactic dossiers." In the seminar "eating culture," they chose products from a supermarket (from pineapples to soja and tomatoes). They then collected relevant texts, pictures, and learning methods for the classroom. Hence, they didactically processed the seminar content (cultural history, world market context, nutritional science, sustainable farming, ...) and looked for new teaching/learning forms. In the seminar "Travelling as an Intercultural Encounter," some aspects of the topic (as detailed in the study text) were didactically processed for the dossiers. All participants could then use these dossiers. They were evaluated by criteria that were developed together. In the seminar "Images of foreignness and oneself," the students created critical incidents for schools that were then discussed in the seminar.

The overall good or very good feedback from the students of all seminars confirmed the validity of the seminar concept which is presented here. An important factor was that theoretical work, creative seminar methods, and project- or product-oriented work were linked. Very positive was the feedback concerning the use of critical incidents. In the final evaluation talk, several elements were highlighted:

- Critical incidents are concrete examples of conflicts in your later job, for which you must find practical solutions. Therefore, there is a high degree of applicability.
- At the same time, the central conflicting areas of the teaching profession became obvious: between closeness and distance, working on a relationship but being confined by (structural) obligations, learner and topic orientation, and especially between the universal claim of the state institution school and individual expectations of individual pupils and their communities. Teacher education can, therefore, never aim for unambiguity along a "right-wrong-scale." Instead, they must develop their individually founded position within the debated area. Teachers who act professionally can use a wide-ranging analysis toolkit that enables them to examine a conflict appropriately and establish its possible background. This will lead to the development of a wide range of options for action.

- A lot of critical incidents focus on communicative misunderstandings. It would be best to establish several different ways of reading the situation here. This should counterbalance the more mainstream "culturalistic" interpretations: conflicts and misunderstandings can have individual reasons (developmental psychology). They can also stem from experiences in a pupil's personal and social environment – or they can have their origin in the relevant peer groups. The form of the teacher-pupil interaction can also be a factor, as are individual communication styles. The communication-psychological concept of Friedemann Schulz von Thun (1981 ff; see Fuchs 2022) has shown to be an excellent and differentiated analysis toolkit to make the speaker and listener better aware of the different levels of what was being said and meant.

Conclusion: University didactics for the university of tomorrow

Teachers' self-image as learning facilitators, helpers, critical partners, and challengers has yet to develop. The above-mentioned didactic principles are helpful and necessary in university didactics and (further) teacher training. In a seminar on the analysis of teacher training systems in an international but mainly European comparison³, it was shown that in-service training for teachers is archaic not only in Germany but also in many other European countries. Teacher trainers still present knowledge, and questions of the participants remain on the surface. The power imbalance "expert–novice" is usually very dominant. There can be another way. In a survey (ZELF 2016) conducted at our university a few years ago, teachers voted to make further training more extensive and long-term. A single, usually two-hour-long information event is still the standard for further teacher training, even if it is unsatisfactory from the participants' point of view.

They instead wish to have teacher training programs according to the didactic principle of *approchement*, where teachers and researchers meet in professional learning communities at eye level as experts with different orientations. Learners should not be seen as a problem, but they should get the space to work together on the issues at hand. Professional learning communities can offer the protected space in which a *habitus* of *approchement* between teachers and researchers can be developed. Therefore, universities shall open up for teachers through joint courses for students and school teachers. Thereby, a *habitus* of scientific working can develop in a meaningful way.

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³ Blumschein, Patrick: Lehrerfortbildungssysteme im europäischen Vergleich (winter term 2021/22 & summer term 2022)

Thomas J. SORK

International Adult and Continuing Education Hall of Fame Inducts Class of 2023



On October 3, 2023, seven outstanding educators were inducted into the International Adult and Continuing Education Hall of Fame (IACEHOF) during a ceremony held as part of the annual conference of the American Association for Adult and Continuing Education (AAACE) in Lexington, Kentucky, USA. The Hall was established at the University of Oklahoma, USA, in 1993 to honor individuals worldwide who have made distinguished contributions to the field of adult and continuing education and to serve as a record and inspiration for the next generation of continuing education leaders. The Hall also has an active European Chapter that hosts virtual meetings of members and encourages nominations from the region.

The 2023 induction marks the 27th anniversary of the Hall. Each year, many worthy individuals are nominated by their colleagues and other members of the Hall. The contributions of nominees—both academic and professional—are reviewed by a committee consisting of previous inductees that then makes recommendations to the Hall's Board of Directors. Those selected are invited to an annual induction ceremony which is typically held somewhere in North America or Europe, often as part of a larger related event. The 2022 induction was held in Cork, Ireland, as part of the ASEM (Asia-Europe Meeting) Global Lifelong Learning Week celebrations hosted by University College Cork.

Class of 2023 Individual Inductees

Following are brief profiles of each member of the Class of 2023. For more detailed information on members of the Hall and how to submit a nomination or make a donation, please visit the Hall of Fame website.



Reading Left to Right: **John Boulmetis**, **William J. Rothwell**, **Aaron Benavot**, **Katarina Popovic** (accepted the Organization Award on behalf of the International Council for Adult Education (ICAE), **Kimberly D. Osborne**, **Uwe Gartenshlaeger**, **John Henschke** (accepted award on behalf of John Parker), **Anke Grotlüschen**

Aaron Benavot. Benavot has been a strong, unwavering, and innovative voice in international policy and monitoring discussions of adult learning and education and lifelong learning. His involvement in the development, drafting, and dispersing of seven UNESCO Global Education Monitoring Reports represents a seminal contribution to the international field of adult and continuing education.

Benavot is professor of global education policy for the Department of Educational Policy and Leadership in the School of Education at the University at Albany–SUNY, a position he has held since 2008. There, his interests center on comparative education research, global education policy, and the interaction between education and sustainable development. His scholarship critically examines primary and secondary education and the spread of national and international assessments.

John Boulmetis. Boulmetis is a distinguished adult educator known for his work at the University of Rhode Island (URI) and his contributions to the field through involvement with the American Association for Adult Education (AAACE). At URI, he redesigned the Master of Arts degree in adult education, making it the largest MA program at the university. Over the course of his career, he served as major adviser for more than 300 MA and PhD students and was the principal investigator on projects dealing with industry-based training, adult basic education, experience-based career education, community education, gerontology, vocational education, and human service agencies across the US Northeast.

In 1985, he collaborated with the U.S. Department of the Navy to offer the MA in adult education with a specialization in Education Management and Training Specialist (ETMS) for officers of the Newport Navy Base. In 1987, he was named the Rhode Island Adult Educator of the Year by the Rhode Island Association for Adult Education (RIAACE).

Uwe Gartenschlaeger. Gartenschlaeger has focused attention on adult education on the national, regional, and international levels. In March 2023, Gartenschlaeger became director and chief executive of DVV International, an institute of the German Adult Education Association, but his contributions to the field as both practitioner and policymaker have enriched the lives of trainers and students across Europe, Asia, and Russia for decades.

Gartenschlaeger joined DVV, the largest organization for adult education in Europe, in 1995. Within the organization, he served as country director for Russia, regional director for Central Asia and Southeast Asia, and project manager for East-Central Europe. He became deputy director in 2019. Through his work for DVV, Gartenschlaeger has played a significant role in restructuring adult education systems in partner countries and has been instrumental in policy creation.

Anke Grotlüschen. Grotlüschen is a widely cited and internationally recognized researcher known for her scholarship on adult education and literacy. Her trailblazing research on literacy is respected among policymakers and researchers alike with findings that contradict common stereotypes about how low-literate adults function in society.

Her work as Professor for Lifelong Learning at Hamburg University occupies a unique intersection between practice and pure research. Her primary goal has been to provide the evidence for more funding and the institutionalization of more than 25 basic education centers within Germany, while focusing on the areas of greatest need. In all of her work, she has focused

on the ways that adult education can be emancipatory and not exclusively centered on improving work opportunities.

Kimberly D. Osborne. Osborne has significantly shaped how people use information and power to inform and influence others, make sense of the world, and negotiate their place in it. Her leadership

has been especially impactful at the intersection of mass communication as a means of informal and incidental education and strategic program planning. Her scholarship and practice inform how power relations and interests shape outcomes, and she has been consulted worldwide in leadership development and change management.

From January 2013 to April 2014, she served as the chief strategic communication adviser to the Afghan National Security Forces at the end of Operation Enduring Freedom, the longest NATO mission in history. Osborne led a multinational team of senior advisers and was assigned to “fix” the “broken” communication function in the Afghan National Army. Using research and training in adult education, she conducted an organizational analysis and presented a remediation plan to the Afghan Minister of Defense, resulting in unanimous approval and orders to implement her recommendations. For her achievements, she received numerous awards and medals from the U.S. Department of Defense, NATO, and the government of Afghanistan.

John Parker. Parker is perhaps best known as the founder and first director of the University of Missouri's Lifespan Learning Program, the learning in retirement program now known as the Osher Lifelong Learning Institute at MU. As a retired volunteer, Parker led efforts to offer regularly scheduled, noncredit short courses and lectures in academic settings, taught by retired professors from MU and Columbia College and experts in the community. This not only gave many residents a deeper sense of affiliation with the academic community, but also fundamentally transformed how continuing education for the senior population is offered.

While serving as a continuing education specialist for MU's extension program, he developed and implemented noncredit short courses and lectures around the state for adult learners on a variety of topics, including creative writing, understanding and using the internet, Latin American history, the basics of electricity around the home, horticulture, the Lewis and Clark Expedition, basic photography, the legal aspects of journalism, and dozens of others.

William J. Rothwell. Rothwell's successful career in adult education, primarily in the advancement of training and development, spans more than three decades. Before becoming a faculty member at Pennsylvania State University in 1993, he logged nearly twenty years of experience in government and the private sector. His professional and research background has allowed him to bridge academic discourse in workforce education with industry best practices to teach and research complex issues, significantly contributing to workplace learning, succession planning, and talent management.

As an engaged scholar and researcher, Rothwell's primary passion is developing future scholars and leaders. He has conducted multiple studies in workforce development and has contributed significantly to the literature of the field. His publications include many books, book chapters, and more than 150 articles, as well as numerous national and international presentations on professional management, organization development, succession planning, and human resource development. Rothwell continues to support and mentor students who graduated more than thirty years ago, modeling his belief that developing individuals goes beyond mere education.

Each individual inductee is awarded a plaque and a medal to recognize their membership in the Hall. A copy of each plaque hangs in the hallways of the University of Oklahoma's College of Continuing Education, Thurman J. White Forum Building, in Norman, Oklahoma.

Organization Award

Beginning in 2021, the Hall established a new category for organizations that make distinguished contributions to and significantly impact the field of adult and continuing education. The first organization inducted was AONTAS, the Irish National Adult Learning Organization.

At the 2023 induction ceremony, the International Council for Adult Education (ICAE) received the award for 50 years of advocacy on behalf of adult learners internationally. The ICAE was founded in Toronto in 1973 and remains the only global civil society organization for adult education and lifelong learning today. With its vision of education as a human right for all people, ICAE brings together members from sixty countries across seven world regions. Together they strive to promote learning and education for adults and young people in pursuit of social justice within the framework of human rights, to secure the healthy, sustainable, and democratic development of individuals, communities, and societies. Accepting the award on behalf of the ICAE was Dr. Katarina Popovic, Secretary General.

The current Chair of the Hall's Board of Directors is Dr. Éva Farkas, Associate Professor, University of Szeged, Hungary. The Executive Director of the Hall is Dr. James P. Pappas, retired from the University of Oklahoma.

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