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Adult Education 2023 – In the Context of Artificial Intelligence

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A Message from the Editors in Chief

Dear colleagues,

We are pleased to present a collection of papers from the 13th International Conference on Adult Education – In the Context of Artificial Intelligence (IAEC 2023), which took place on 25th and 26th September 2023 in Prague at the Faculty of Education, Charles University.

Charles University is the oldest university in Central Europe and has traditionally supported excellence in the humanities and other disciplines. The Czech Andragogy Society, co-organiser of the conference with the Faculty of Education of Charles University, is the largest professional organisation in the Czech Republic specialising in the development and research in the field of adult education. The 13th conference was strongly influenced by the growing use of artificial intelligence in education.

The conference included two workshops focused on the use of AI in education. And also, on innovation in higher education. The content of the proceedings follows the main topic of the conference, which were presented in the different sessions:

- Innovation and Digitalisation,
- development of digital literacy and competences,
- new models of education and forms of learning,
- Social interaction and developments in education.

The conference highlighted that digital technologies together with artificial intelligence are fundamentally changing the approach and paradigm in adult education. Specifically, conference papers presented and discussed new methods for creating personalized learning materials and adaptive tests through AI that better meet the individual needs of adults. In addition, emphasis was placed on the integration of digital technologies and ChatGPT into adult education, opening up new possibilities for interactive and personalized learning. These technologies, including virtual reality, flipped classrooms, virtual co-teaching, etc., not only allow for faster and in some cases more effective knowledge acquisition, but also support the development of critical thinking in adults. The use of artificial intelligence in conjunction with digital technologies enhances the accessibility of adult learning content in the 21st century.

Articles should be original, previously unpublished and not under consideration for publication elsewhere at the time of submission. The collection of papers is managed by its editors, reviewers, and conference committee. This volume of conference papers, published as an e-book, will be submitted for evaluation and possible inclusion in the Web of Science: Conference Citation Index.

Czech Andragogy Society has sent complete papers to two members of the program committee for full blind peer review and a summary of review back to the author(s).

Virtual co-teaching and its effectivness: summary of project results

Zuzana Svobodová, Jaroslav Veteška

Abstracts:
The paper summarizes and presents the results of two main phases of the project TL03000133, which focused on the development of a virtual co-teaching method and aimed to determine whether virtual co-teaching is as effective as standard physically implemented co-teaching. Using a mixed-methodology approach, the research team investigated the benefits to teaching and the barriers to implementation in addition to effectiveness. The extensive three-year project verified that the effectiveness of virtual and conventional co-teaching is comparable and described important conditions that schools need to ensure in order to teach effectively and meaningfully through virtual co-teaching.

Key words:
co-teaching, effectiveness, experiment, new method, teacher collaboration, virtual co-teaching

Introduction

Virtual co-teaching is a new method developed within the project TL03000133 supported by the Technological Agency of the Czech Republic (TACR). It is based on standard co-teaching methods and extends it with a virtual element. It is a collaboration of two educators, where one of them is always present in the class virtually. The other aspects of co-teaching remain the same, i.e. it can be implemented in different ways (e.g. duet, one teaches and the other complements or other models mentioned above in more detail and also for example Veteška et al., 2020, Kursch & Veteška, 2021, Svobodová, 2021, Svobodová, 2023), it involves joint planning, implementation and evaluation of lessons taught. It is not a haphazard virtual connection of another educator, but a full-fledged component of the teaching process.

Within the project, which took place between 2020 and 2023 at the Department of Andragogy and Management of Education, Faculty of Education, Charles University, the effectiveness of virtual co-teaching was verified, its possibilities, obstacles and barriers were identified. Based on the research results, virtual co-teaching was optimized and procedures were set up to increase the positive impact of virtual co-teaching on students. The results of the project and the research were intended for pedagogical practice and aimed at a real impact on the educational reality in Czech schools, therefore all the results were implemented into teaching through cooperation with the application guarantors – two secondary schools and two primary schools and continuously consulted with the Czech School Inspectorate as another important application guarantor of the project.

The project was divided into four main phases, which (apart from the pre-research) were mutually intertwined and complementary; these were the following stages and their framework results:

1. Pre-research

Outputs: scoping review, qualitative study, reflective report

2. Method development, implementation and research

Outputs: publication of the results of the repeated experiment and qualitative investigations

3. Dissemination of the method

Outputs: recordings of virtual co-teaching, methodology for teaching staff

4. Identification of possible areas for the use of virtual co-teaching

Outputs: Publication of results of sub-researches of specific focus

In the following chapters, we present the key results of the two main project phases – i.e. the pre-research phase and the method development, implementation and research phase – that focus on the effectiveness of virtual co-teaching. All achieved results were presented in the form of publications in Czech and foreign journals and actively disseminated into practice through application guarantors.

1. Overview of project methodology

To achieve the project objectives, the research team relied on both quantitative and qualitative medotological approaches. During the pre-research phase of the project, we used the Scoping Review methodology, which was selected as a frequently used, valid and reliable method that appropriately addresses the research questions. The basis for our study was the work of Arksey and O'Malley (2005), which we followed, and the PRISMA systematic evaluation methodology (Moher et al., 2009). The qualitative sub-study of the pre-research phase of the project was methodologically based on an exploratory and descriptive qualitative approach, which aimed to provide a rich description of the experience depicted in easy-to-understand language and to understand the phenomenon, process, perspectives and opinions of the people involved (Lambert and Lambert, 2012, Graneheim et al., 2017, Dostálová et al., 2021). Research of this type focuses on the authentic 'what', 'who', 'where' and 'why' of lived events or experiences (Neergaard et al., 2009).

In the method development, implementation and research phase, the research team used a mixed research design, combining both qualitative and quantitative approaches. We relied on the methodological approaches of a case study, which aims at a detailed analysis and description of the case through in-depth and multi-source information gathering (Hendl, 2016, Švaříček and Šeďová, 2014), as well as again a qualitative description, which is suitable for capturing the lived experience of an individual or group (Lambert and Lambert, 2012, Graneheim et al., 2017, Dostálová et al., 2021). It is the multi-source data collection that is key to truly understanding the phenomena under study in their natural context. The qualitative data was complemented by a pedagogical experiment verifying the effectiveness of virtual co-teaching using a knowledge test. For the quantitative data, we performed a statistical analysis of the results. In the experimental study, the research team of Assoc. Prof. M. Kursch tried to separate the variables to avoid bias and to exclude all possible confounding variables.

Therefore, we selected groups of pupils with the same average results. These pupils were selected randomly, from a reference group provided by the principals of the schools of the application sponsors where the research was conducted. These were pupils from the same educational programme, with on average the same current and past academic performance. Regarding the other independent variables (apart from the homogeneity of the control and experimental groups), we ensured that the whole experiment was conducted in a uniform manner. We focused on ensuring consistency of virtual vs. traditional learning. As an example, the same location in the space of the teacher implementing classical, frontally guided instruction and co-teaching. With some simplification, we can say that we prohibited one of the teachers from moving during classroom instruction so that his later static virtual image would not be disadvantaged. The experiment involved 10 and 7 pupils in one primary school, 19 and 21 pupils in a second primary school and 30 and 30 pupils in a secondary school. The experimental group (10, 21 and 30 pupils) was taught using the virtual co-teaching method and the control group was taught using the regular physical co-teaching method. For both groups, we first checked the normality of the sample in order to use the t-test.

Although we can accept the assumption that the students' knowledge follows a normal distribution, we still verified that the two groups of students in both experiments have a roughly normal distribution of grades in the subject and that they are from the same age group. There were no outliers and the p-values of the Shapiro-Wilk test were greater than 0.05, so we could use a t-test. We chose the Welch test assuming ignorance of equality of variances (note: we considered

this method more accurate). Therefore, we also proceeded to compare Glass' delta instead of Cohen's d. Although we were not sure of the normal distribution of the scores, we obtained similar results in non-parametric tests (Kursch et al., 2022).

2. Key results of the pre-research phase of the project

The findings of a scoping review (Veteška et al., 2020) confirm that co-teaching is an umbrella term for teaching in which two teachers participate in different roles and with varying degrees of activity (Murawski, 2017). Co-teaching has been examined in the source documents not only in terms of its implementation, but also in relation to the process of its preparation, which includes, in particular, the planning of the co-teaching course/lesson, including the distribution of the roles of the teachers, and the subsequent reflection and evaluation of the effectiveness of the co-teaching, including possible course modifications.

Co-teaching can be analysed from different perspectives. It is clear, however, that the different areas of co-teaching and perspectives on its use are intertwined and linked to specific contexts (e.g. virtual environments), with the issue of co-teaching effectiveness connecting them. Identified as a central and cross-cutting theme, effectiveness of co-teaching includes both the perspective of effectiveness from the teacher's side (Wilson and VanBerschot, 2014, Jurkowski and Müller, 2018, Neifeald and Nissim, 2019, Rabin, 2020) and from the students' side (e.g. Puttonen, 2014, Strogilos, 2018).

For the effectiveness of the virtual co-teaching process from the teachers' perspective, technical readiness is crucial, standing at the boundary between the themes of effectiveness and challenges and obstacles. For the students, then, in the virtual form of co-teaching, in addition to the mentioned technical readiness, the human readiness (cooperation) of the co-teaching pair is also important, enabling students to navigate the learning process well. Based on the texts analysed, the theme of 'problems and obstacles' is dominated by the factors of technical problems, human factors and lack of time. Yet technical problems are limiting especially for virtual co-teaching. The human factor emerges as a significant problem where collaboration does not work, teachers do not plan and evaluate co-teaching, including the division of roles. Most studies also agree that lack of time is the most critical to the effectiveness of co-teaching and the most influential on the overall effectiveness of co-teaching.

To develop the virtual co-teaching method, it was essential to have a good understanding of the obstacles and problems that distance and online learning bring. The results of the scoping review made it clear that the technical area is crucial for effective virtual co-teaching. Therefore, it was the barriers and challenges of distance learning that were investigated in the pre-research phase (Svobodová, Kursch & Veteška, 2021). The findings were based on eight semi-structured interviews with participants from the application sponsor's school, and the aim was to describe and identify the main barriers and challenges that distance and online learning in primary school entailed. The results of this study identified three major areas that affect the effectiveness of teaching in an online environment, namely 1) technical issues, 2) socialization issues, and 3) widening gaps between students. The results showed that the area of technical problems is not only based on the technical equipment of schools and families, but is also related to other aspects – such as the maturity and age of the students, the family situation during the learning process, and overall personal adjustment and willingness to learn something new. The study reaffirmed that personal contacts and standard face-to-face teaching are irreplaceable for this age group of pupils, and that their absence leads to further widening of differences between pupils and complicates the already challenging education of children with special educational needs.

3. Key results of the development, implementation and research phase of the method

This phase was based on two key studies – a primary school case study (Svobodová, Veteška & Dvořáková, 2022) and experimental research in two primary and one secondary school (Kursch

et al., 2022). The main overarching goal of this phase was to answer the question of how effective virtual co-teaching is compared to regular physical co-teaching. With the results of the pre-research phase, we were able to eliminate the largest number of problem areas, specifically technical difficulties, which emerged as a major issue in all studies and our own research.

The results of both studies are based on the following data:

Method	**Number and specification**	**Characteristics of respondents**
Individual interview	2 interviews with teachers	Teacher and co-teacher
Group interview with teachers	1 after classes	2 co-teachers
Group interviews with pupils	2 after classes	The interview group consisted of five selected pupils (volunteers)
Observations	2 classes, one with traditional and one with virtual co-teaching	7 pupils were present in the classical co-teaching, 10 pupils in the virtual co-teaching
Experiment	Primary school: 10 and 7 pupils Primary school: 19 and 21 pupils Secondary school: 30 and 30 pupils	The experimental group consisted of 10 pupils at the first primary school and 21 pupils at the second primary school; the groups were randomized
Knowledge tests	6 tests given after each lesson	Respondents – see experiment description

Source: own processing

Research has clearly demonstrated the difficulty of co-teaching in all its phases and especially in the preparation phase, where it is necessary to take into account teachers' relationships and their subjective willingness to cooperate in addition to the time invested (Adamec 2018, Adamec, 2019, Kryštof & Adamec, 2021).

In all experimental and control groups, the entire teaching process was conducted according to a rehearsed scenario. We also eliminated any risks associated with the failure of the technical facilities for virtual learning. We always prepared the infrastructure for teaching in advance. The limit for us was the sample size and minor individual differences that would not affect the average, as well as the impossibility of ensuring complete agreement throughout the teaching unit. A positive finding was that the effectiveness reflected in the knowledge achieved by the learners was the same for both physical and virtual co-teaching, i.e., virtual co-teaching was no less effective than traditional co-teaching for the participating learners.

In any case, it should always be kept in mind that verifying the effectiveness of an educational method is not a simple and straightforward task (Hubálovský, Hubálovská & Musílek, 2019). In terms of efficiency, if we define it as the achievement of test scores including all the costs of co-teaching, virtual co-teaching appears to be more efficient than traditional co-teaching. This conclusion can easily be reached by calculating the cost of commuting, time loss, ease of availability of teachers (e.g. native speaker, production expert, foreign expert, etc.), assuming that the cost of the technology is also used for other purposes and thus is not acquired only for the purpose of co-teaching (Kursch et al., 2022).

The qualitative data (Svobodová, Veteška & Dvořáková, 2022) showed that students always perceive new elements included in the lessons (i.e. virtual co-teaching in our case) as interesting and that they attract their attention, which leads them to be more focused and interested in the lessons if the new element is included. Co-teaching can have a high added value from the learners'

point of view in many areas - it allows for individualisation (as mentioned above), increasing the pace of learning, improving discipline, bringing different perspectives to the content being discussed, etc. However, it is essential to be clear that the presence of both brings something to the teaching that one could not do alone. In some cases, students did not see this added value and reported that they thought the other teacher was unnecessary. It is also essential, according to the pupils, that the teachers are able to get along and set up a collaborative relationship. If each had a different style and did not agree beforehand, confusion could arise and this would make it harder for pupils to learn. Of course, a major obstacle to virtual co-teaching is technical equipment and connectivity issues. If the technology doesn't work, the positive effect of two educators and the claimed added value doesn't happen, and everything revolves around removing technical barriers.

The added value of co-teaching lies in the collaboration of two educators, but also in the context of the subject content and its attractiveness to students. If co-teaching is successfully incorporated, it is also possible to target the attractiveness of the whole subject. In science subjects, for example, it is possible to involve experts who would otherwise be inaccessible to pupils and physically unable to get to school. Virtual co-teaching thus opens new doors for making teaching and subjects more attractive and increasing interest in technical subjects that are still not sufficiently interesting for young people. Considering further the context of the use of native speakers in language education, it is widely known that their involvement has started to develop widely and they are now a common part of the educational process.

In contrast, it is of course more difficult to involve authentic backgrounds and experts in chemistry, physics, mathematics, astronomy, geology and other natural sciences in this mass way. The method of virtual co-teaching allows precisely for the effective involvement of experts from these fields in the educational process without the need for their physical presence and at the same time to synchronously mediate the didactic situation, thus enabling an authentic learning experience for the students. A lesson conducted in this way then logically activates the pupil's learning and allows the maximum possible efficiency of learning to be achieved.

What has its positives, certainly has a negative side to it. Diametrically different perspectives on a topic can cause confusion for students and are ultimately counterproductive. It is therefore essential that the co-teachers actually agree on the content of the lesson and consider whether their different perspectives make co-teaching possible at all. Extreme views of one of the co-teachers in particular are very problematic and confusing for the pupils if, for example, one imagines a presentation of a nuclear power plant by a standard chemist and an environmental activist. Co-teaching in such a pair can of course also be very activating if teachers can exploit the differences didactically and not take the lessons as a platform for presenting their own views.

It is therefore clear that the observed views of students and the evidence from research studies point to virtual co-teaching as a method of extending the pedagogical space into environments where schools do not normally reach. However, it is also a method that places high demands on both co-teachers and their collaboration and preparedness. Therefore, it is essential to explore the topic not only from the perspective of the students but also from the teachers' perspective, to find out how they reflect on the lessons conducted by virtual co-teaching and what support they might need for its effective and meaningful inclusion in the classroom (Svobodová, Veteška & Dvořáková, 2022).

4. Conclusion

The paper summarised the key results of the TAČR project from 2020 to 2023, which focused on the effectiveness of virtual co-teaching and relied on a scoping review, qualitative data and a pedagogical experiment. A detailed summary of the project in all its phases is contained in the comprehensive monograph Virtual Co-teaching as part of Innovative Methods for the 21st Century (Svobodová, 2023). In a world of ever-evolving technologies and digitalization, virtual co-teaching appears to be an innovative method that has the potential to bring advantages and new possibilities to the educational system. It is a method that allows flexibility, a broader approach to

learning and the ability to integrate experts from different fields into the learning process. Virtual co-teaching is a new model of collaboration between educators that allows for a richer and more diverse learning environment. It also offers the possibility to bridge geographical barriers and enable collaboration between educators and between schools in different locations and time zones.

However, as we identified during our research, implementing virtual co-teaching also presents a number of challenges. These challenges relate mainly to technical aspects, the adaptation of pedagogical strategies for the online environment, and the need for effective coordination and communication between collaborating educators.

Using experiments and mixed quantitative and qualitative research, we investigated the effectiveness of virtual co-teaching. Measuring effectiveness in a pedagogical process is logically very difficult, these are not laboratory investigations and other variables come into play that cannot be completely eliminated with the best preparation. If we simplify effectiveness to learning outcomes, we can conclude from our research that there is no difference between physically implemented and virtual co-teaching. The results in knowledge tests were similar for all students after both types of co-teaching. However, the question of whether virtual co-teaching is as effective a method as regular co-teaching cannot be answered in this simple way, because we cannot equate test scores with teaching effectiveness. It is necessary to take into account other factors that enter into the pedagogical process. These factors have been gradually uncovered with the help of qualitative studies and through constant and long-term contact with application supervisors.

Virtual co-teaching only works if the collaboration between the two educators is well set up, both know exactly what role they have in the learning process and what they specifically have to do in it. The lesson has to be very precisely planned and prepared basically as a scenario in which a part for each educator is marked according to the chosen type of co-teaching. It is essential that both educators are able to work well in the virtual environment and that the learning is not disrupted by any technical complications. The demands on the technical equipment for virtual co-teaching are high.

In order to be able to teach well, the virtual educator needs contact with the students as well as with his/her physically present colleague. The contact with the pupils must be of sufficient quality to be able to transmit well the normal course of teaching, i.e. also the normal noise that teaching produces, and to be able to hear and respond well to the pupils during the course of teaching. Thus, while it is possible to connect an educator in this way from virtually anywhere in the world, it is not possible to expect the educator to connect and run effective co-teaching. The actual implementation of the learning is already essentially the culmination of the whole co-teaching process and long and careful preparation.

Therefore, if we want to apply effective co-teaching, we have to decide really well for which educational goal and for which expected outcome according to the framework and school curricula virtual co-teaching is the most suitable method. The teacher as an erudite educational professional should always ask this question before deciding to implement virtual co-teaching and if he/she considers it to be an appropriate method, then with the right preparation it can open the way for students to other educators and environments from all over the world without the limit of the location of the school.

Despite these challenges and the complexity of virtual co-teaching, we believe that it has great potential to improve the quality and accessibility of education, even as technological capabilities continue to evolve and improve. The method offers new opportunities for educators, allowing them to develop their skills and capacities, as well as enriching their teaching practice.

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Students‘ attitudes towards replacing teachers with artificial intelligence

David Kryštof, Petr Adamec

Abstracts:
Artificial intelligence permeates our daily lives. It is already starting to be used in education as well. We cannot now predict how artificial intelligence will be used in the coming years. This will also significantly affect university teachers. The paper describes the results of a research survey focused on students' attitudes towards the replacement of university teachers with artificial intelligence conducted among students preparing for the profession of professional adult educators.

Key words:
artificial intelligence, attitudes, lecture, seminar, students, teaching, teaching method

Introduction

The relationship to artificial intelligence is gradually developing and changing (Kim, 2023). Artificial intelligence is implemented in various areas of our life, such as IT (Hariyanti et al., 2023), but it is also considered in other areas such as economics (Aguzarova et al., 2023; Sabil et al., 2023), leadership or HR management (Albassam, 2023; Almandoos Alblooshi et al., 2023; Łukasik-stachowiak, 2023; Takahashi et al., 2023; Qin et al., 2023), or even the judiciary (Karmaza et al., 2023). Of course, education is also an important area (Hu et al., 2023; Chen et al., 2022; Cathrin & Wikandaru, 2023; Park & Kwon, 2023; Xia & Chiu, 2023). However, there are certain risks associated with this (Li & Gu, 2023). The question is what competences we humans should develop in relation to artificial intelligence, whether in the areas of cognitive, relational, or emotional (Chandra et al., 2022), or what competences the learners should develop (Sanusi et al., 2022). Thanks to artificial intelligence, it is necessary to start teaching in a different way (Qu et al., 2022). Examples of the use of AI in younger children are already emerging (Yang et al., 2023), or in language teaching (Huang et al., 2023).

The attitude of learners towards artificial intelligence is also a significant area. We focused our research on students at the Mendel University in Brno, majoring in Applied Pedagogical Studies, which focuses on training experts in education, primarily in adult education. This is a heterogeneous group (full-time and distance learning students). Our focus was on what the students' attitude is to replacing teachers with artificial intelligence and what would be the benefits or risks of this replacement.

Methods

For empirical research, we chose a quantitative approach implemented by questionnaire survey. The questionnaire was created with the help of Microsoft Forms and mainly scaling questions and open questions were used. Attitude questions included a 0-10 scale. For the purposes of data interpretation, this was divided into 3 areas, namely negative attitude (values 0, 1, 2 and 3), neutral attitude (values 4, 5, 6 and 7) and positive attitude (values 8, 9, 10). The questionnaire was anonymous. Data collection took place between the end of November and the beginning of December 2023. The total size of the research sample was 146 people at the time of the research investigation. The entire research sample was approached by e-mail with a request for completion. Before sending out the questionnaire, we conducted preliminary research on 4 respondents who filled out the questionnaire and gave us feedback regarding their understanding of the individual questions. Due to the number of completed questionnaires, we sent another e-mail with a request to fill out the questionnaire. Also during the lesson, we asked the students to fill out a questionnaire that was sent to them by e-mail.

The research sample consisted of students of the Bachelor's program of Applied Pedagogical Studies at the Mendel University in Brno. This is a non-pedagogical field of study preparing future adult educators or specialists in further education and management and development of human resources. These are students in both full-time and combined forms of study. There are 63 students studying full-time, of which 4 are men and 59 are women. In the combined form of study, 83 students, of which 14 are men and 69 are women. This is a very heterogeneous group in terms of age, people between the ages of 19 and 60 are represented.

76 respondents filled in the questionnaire, of which 37 respondents indicated full-time study of the field, 37 respondents indicated study in a combined form, and 2 respondents did not indicate their answer. The return rate of the questionnaire is 52 %. The most represented age group was the group aged 21-25 (26 respondents in total), followed by the group of people under 20 (15 respondents in total).

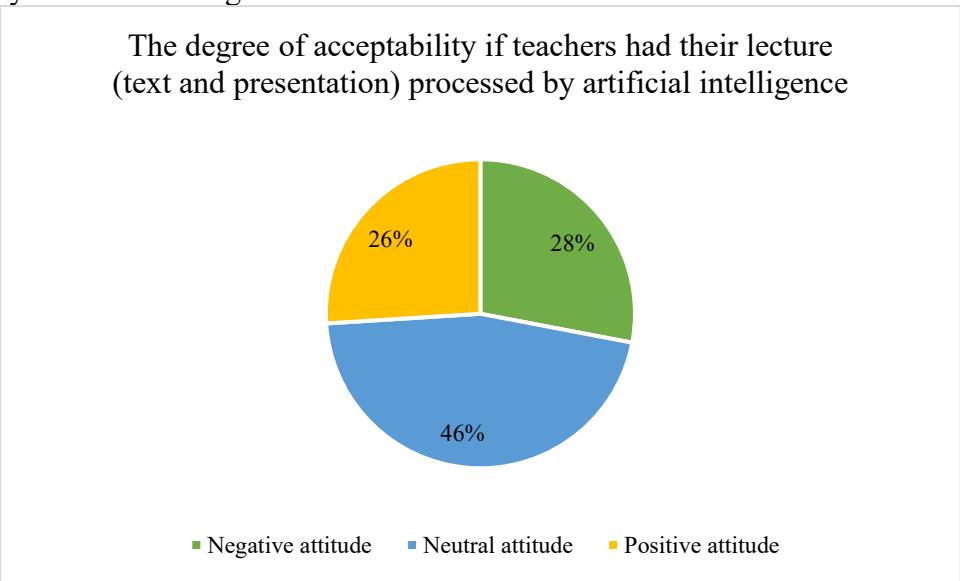
The main goal of the questionnaire survey was to find out the attitude of students towards the replacement of university teachers with artificial intelligence, specifically in the preparation of their lectures, providing feedback to students and general replacement during the lecture and during the seminar. It also included open-ended questions focused on benefits and risks from the perspective of the respondents.

Results

The replacement of teachers by artificial intelligence can take place to varying degrees and in different forms. We focused on replacing teachers already in their preparation, providing feedback on semester or final theses to students, or replacing them during a lecture or seminar. For a deeper analysis of the data, we also asked an open question focused on the benefits and risks of using artificial intelligence when replacing teachers with artificial intelligence. The extent and form of such replacement was at the discretion of the respondents.

Artificial intelligence can be used not only by students, but also by teachers during the actual preparation of lectures or seminars. As shown in Figure 1, respondents have a neutral attitude towards teachers using artificial intelligence for training. It is interesting that students of the combined form of study have a more positive attitude towards when teachers use artificial intelligence for preparation (positive attitude stated by 32 % of respondents) than students of full-time form of study (only 22 % of respondents stated a positive attitude).

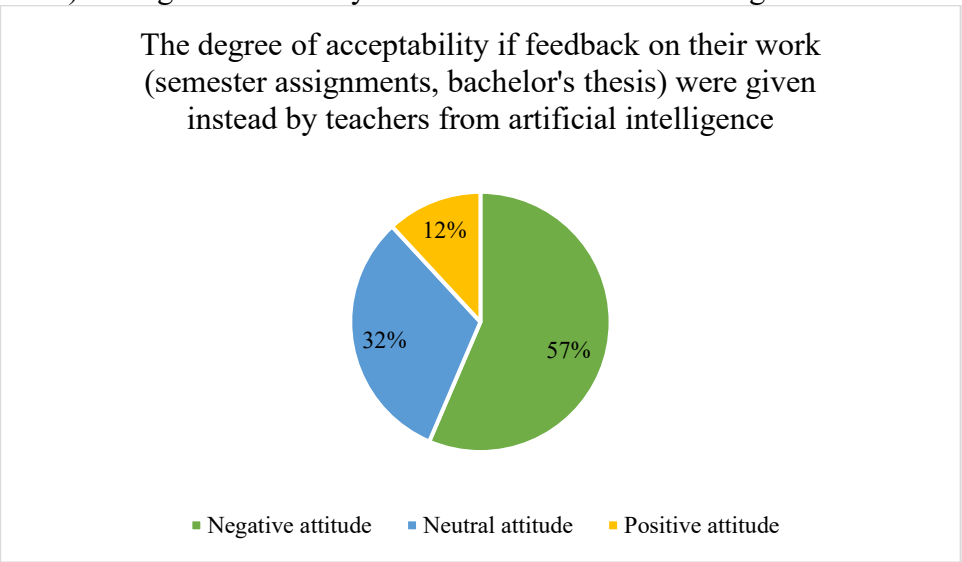
Figure 1: The degree of acceptability if teachers had their lecture (text and presentation) processed by artificial intelligence



Source: own processing

University teachers can use artificial intelligence to provide feedback on students' term papers or final papers. Feedback could thus be personalized, constructive and provided in less time. As shown in Figure 2, the attitude of students towards the use of artificial intelligence by university teachers for these purposes is negative. 59 % of respondents studying in a full-time form of study have a negative attitude, 8 % of respondents (in the case of full-time study) and 16 % of respondents (in the case of a combined form of study) stated a positive attitude.

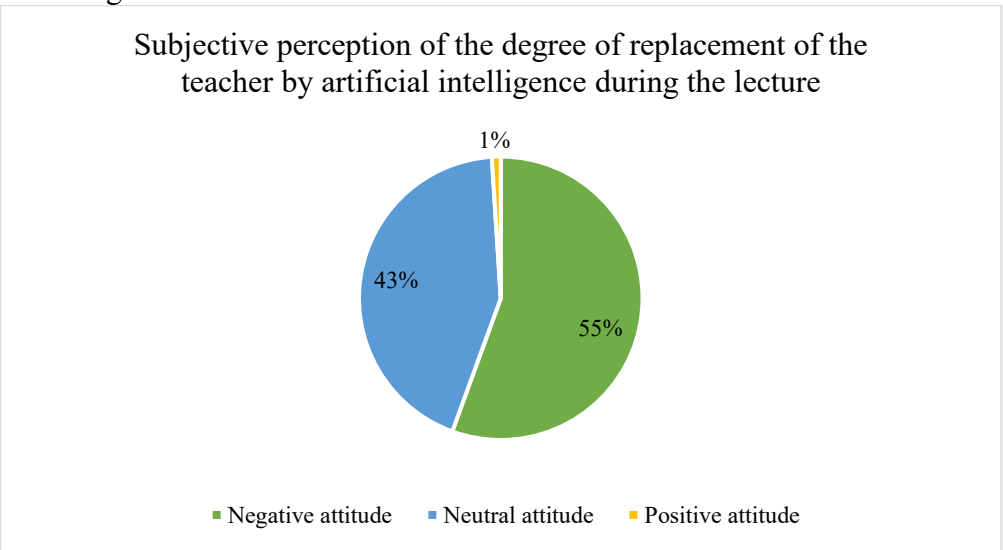
Figure 2: The degree of acceptability if feedback on their work (semester assignments, bachelor's thesis) were given instead by teachers from artificial intelligence



Source: own processing

Due to the expansion of artificial intelligence, it is not possible to define exactly to what extent it could replace university teachers during teaching. Teaching is not only lectures, but also seminars. But they are also laboratory exercises. Since the respondents only have lectures and seminars, the questions were directed in this direction. As shown in Figure 3, 55 % of students showed a negative attitude towards replacing teachers during lectures. Students in the combined form of study showed a more negative attitude (59 %) than students in the full-time form of study (51 %). Only 1 respondent studying in a combined form of study showed a positive attitude.

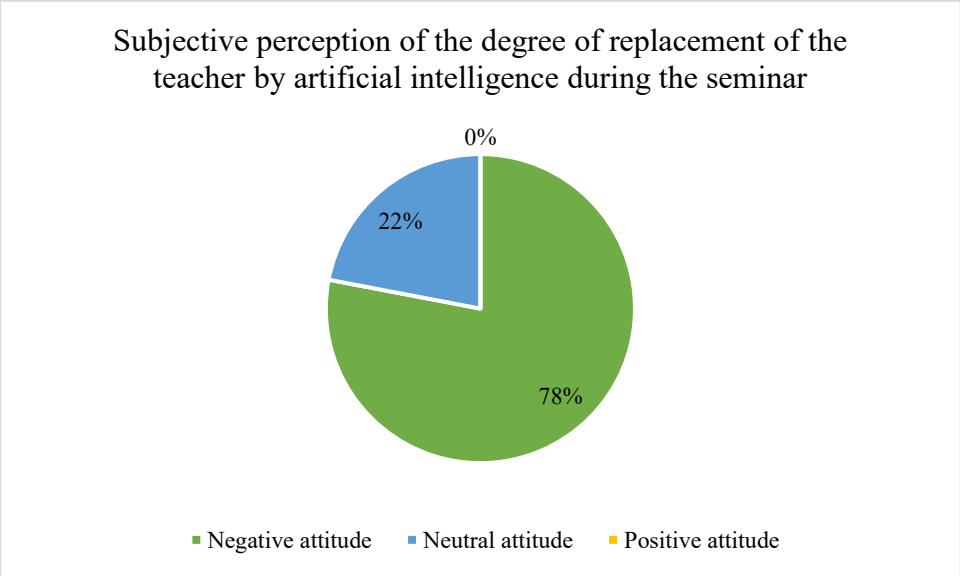
Figure 3: Subjective perception of the degree of replacement of the teacher by artificial intelligence during the lecture



Source: own processing

As shown in Figure 4, students have a significantly more negative attitude towards replacing university teachers during seminars (78 %). It is interesting that the answers of students in both full-time and combined forms of study are the same.

Figure 4: Subjective perception of the degree of replacement of the teacher by artificial intelligence during the seminar



Source: own processing

Part of the research investigation was also finding out through an open question the opinion on the partial or complete replacement of university teachers with artificial intelligence. And that from both a positive and a negative point of view. It was an optional question, so not all respondents answered it.

Respondents in the full-time form of study (n=20) mentioned the structured teaching, the complexity of the information, less stress placed on students, the speed of feedback, or shortening the preparation for the lecture as a positive impact. Respondents in the combined form of study (n=26) add the up-to-date information, replacement in case of illness or indisposition of teachers, trying other methods in education, but also increasing the professional level, when emotions and the risk of failure of teachers would not enter the educational process. However, the most frequent answer (n=8) was that they do not perceive any positive impact.

Respondents studying in the full-time form of study (n=22) mentioned that the negative impact would be mainly in the loss of human contact. One respondent expressed the concern that "The teaching would probably be too professional, sometimes you need to explain the material like for idiots." Respondents studying in the combined form of study (n=28) then cited the absence of human contact as a negative impact compared to respondents studying in the full-time form of study less often, but it was still the most common answer. However, there are reactions such as the absence of critical thinking, the possibility of mistakes, or the absence of spontaneity in teaching.

Discussion

Education, not just higher education, is facing a big challenge in the form of artificial intelligence. The goal is not to fight with it or defeat it, but to learn to work with it and use it positively for the educational process. The question remains as to the degree of possibility of replacing teachers with artificial intelligence. As evidenced by the results of our research on a sample of students of a selected field of study preparing future professional educators, the attitude towards replacing teachers is negative. It is significantly more negative in the case of replacement of teachers during the seminar. On the other hand, students also perceive positive elements. And this in the form of supplementing teaching, such as in the case of health

indisposition of teachers, or to support the up-to-dateness of data. The most frequently mentioned risk in the replacement (whether partial or total) of teachers by artificial intelligence was the loss of personal contact. This is not too surprising for students of this specialization, on the other hand, it places demands on teachers to be able to create such an environment. It would be very interesting to compare the results with students studying technical fields, when the human factor does not play such a significant role.

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ChatGPT in education – A Summary of the Possibilities of usage

Martin Kursch

Abstracts:
The article deals with the use of language prediction technology, specifically ChatGPT in teaching. It maps the initial perception of ChatGPT in the educational environment, touching on the ethical side of using ChatGPT in various contexts. The main goal of the article is to present an overview of the possibilities of using ChatGPT currently – at the turn of 2023-2024 in education. These options are clearly sorted into 3 groups based on the criterion of the teacher's point of view, the learner's point of view and the point of view of the educational organization.

Key words:
ChatGPT in Education, AI, Educational Process, Ethics, Adult Education

Introduction

Our article is based on the recognition that the use of ChatGPT in education shows positive effects (Grassini, 2023; Yu., 2023; Glaser, 2023; Lo, 2023; Jauhiainen et al., 2023; Jein and Lee, 2023). We are currently experiencing a huge boom in technologies using artificial intelligence (AI) algorithms. AI is starting to be used in almost all fields of human activity. Especially in fields focused on information processing and deepening education. We will focus mainly on technologies based on language prediction, such as ChatGPT. Many articles have already been written about ChatGPT, especially since 2022, when the technology began to develop rapidly. By leveraging AI technology, educators can incorporate ChatGPT as part of a diversified teaching tool to achieve more interesting and innovative teaching (Glaser, 2023). Additionally, students can use Chat GPT for self-inquiry, further exploration of knowledge points, and creating a truly intelligent learning system. That is why there are many voices supporting the application of this intelligent tool in education. In our article, we try to summarize the basic range of possibilities of using ChatGPT in the context of education.

The ChatGPT phenomenon

ChatGPT works based on artificial intelligence and machine learning. It is a language model that can generate text based on user input. The system learns from text corpora, which allows it to gain a wealth of knowledge and model. It is controlled by so-called prompts (commands), which allow you to specify what you want from it. For example, it can answer questions, provide information, and even have conversations with users. He can learn from new data and keep improving. It can process and generate various types of texts, such as articles, emails, product descriptions, conclusions from studies, code, translations, and more. (Lo, 2023)

ChatGPT achieves high relevance and quality of responses. It is constantly being improved version by version. As Grassini (2023) points out, the unprecedented capabilities of these versions, such as generating human text and facilitating automated conversations, have broad implications in various sectors, including education and healthcare. Despite their enormous potential, concerns have arisen in the scientific community about their widespread use and opacity. The use of ChatGPT has sparked a wave of discussion regarding the ethics of the use of language prediction versus plagiarism itself. The society of academics has split into two groups, one that, in principle, perceives ChatGPT as pure plagiarism and the other that perceives it more as a co-author of texts, works, which, on the contrary, deepens the process of education. Some academics believe that the development of AI technology should be supported and encouraged rather than restricted and hindered, while others believe that the rapid development of AI technology may bring enormous challenges and risks to humanity that need to be handled with caution (Yu, 2023). According to Kiryakova and Angelova's (2023) survey, the most serious problem for academics is the danger

that students will completely trust ChatGPT without verifying the authenticity of the texts generated (73.6%), which can negatively affect the acquisition of knowledge and skills. Grassini (2023) asked an interesting research question: "what are the current views and evidence on the opportunities and challenges posed by the development and implementation of AI systems in educational settings?". This research question has been explored in a wide range of current research, opinions, and published literature on AI and ChatGPT (and by extension, AI and LLMs) and the impacts of these technologies on the education sector. In general, the scientific sources he examines suggest that AI technology has the potential to serve as a significant asset in education, occupying various roles that enrich both learning and pedagogical experiences.

The advanced features offered by ChatGPT present compelling opportunities for educators to improve pedagogical practices through the design and integration of interactive classroom activities. According to Grassini, educators with the support of ChatGPT are empowered to invent innovative teaching techniques. An example is the adoption of a flipped classroom approach, where learning opportunities are not limited to the classroom but extend to remote environments, fostering an atmosphere of independent study among students. Hill-Yardin et al. (2023) argue that, despite its merits, the generated text is largely shallow, bland, dry, and generic, lacking a distinct "voice" – in fact, rather robotic. Unfortunately, this style can be somewhat indistinguishable (and perhaps exactly mimics) most of the writing in scientific articles, which is often bland, dry, formulaic, and devoid of superlatives. A possible way to "beat" software, or at least allow us to tell the difference, is to introduce more diversity into our writing styles to make our humanity more evident. This approach could also be extended to further discussion of our mistakes or unsubstantiated hypotheses, which will have other uses for this field.

ChatGPT's capabilities extend far beyond helping teachers create quizzes, exams, and syllabi. It's also a powerful tool for creating comprehensive lesson plans, engaging presentations, and other educational resources. This added support allows teachers to adapt and enhance these materials in more dynamic and engaging ways to meet different learning needs. By reducing the burden of routine tasks, teachers have more time to think, innovate, and come up with new teaching techniques and activities. ChatGPT also serves as an interactive communication platform, allowing teachers to organize more engaging classroom activities. Teachers can use ChatGPT to create learning aids, such as slides, that present expected learning outcomes and the criteria needed to complete a course.

Kiryakova and Angelova (2023) report that ChatGPT has piqued user interest and provoked educators, researchers, and educational institutions about its role in education. Its proper integration into education can support teaching and learning activities and highlight the benefits of digital technologies. ChatGPT can be an intelligent learning assistant for students and educators that supports personalized and adaptive learning. At the same time, ChatGPT can be used unfairly and unethically, raising serious concerns among educators, educational institutions, and society. When creating and implementing new technological tools in education, the attitudes of educators regarding their application, expectations and interests are very important.

As Yu (2023) notes, more advanced technologies may emerge in the future that can change the face of chatbots, or the way people chat to improve the user experience. A recent survey revealed that nearly 89% of U.S. college students use Chat GPT to complete homework, with 53% using the tool to write papers. Additionally, 48% of students use Chat GPT during exams, and 22% use Chat GPT to generate paper outlines (McGee, 2023). However, it should be noted that some students are not only able to successfully complete assignments using Chat GPT but also achieve high scores. Still, it is difficult for teachers to determine if students are using Chat GPT, which has the negative impact of making students overly dependent on the tool, gradually causing them to lose the ability to think critically, examine, verify, and actively summarize.

Yu (2023) reiterates an article published in the journal Nature titled "Chat GPT: Five Priorities for Research" highlights the benefits of incorporating AI, arguing that Chat GPT technology can significantly reduce researchers' workloads, allowing them to devote more time and energy. To

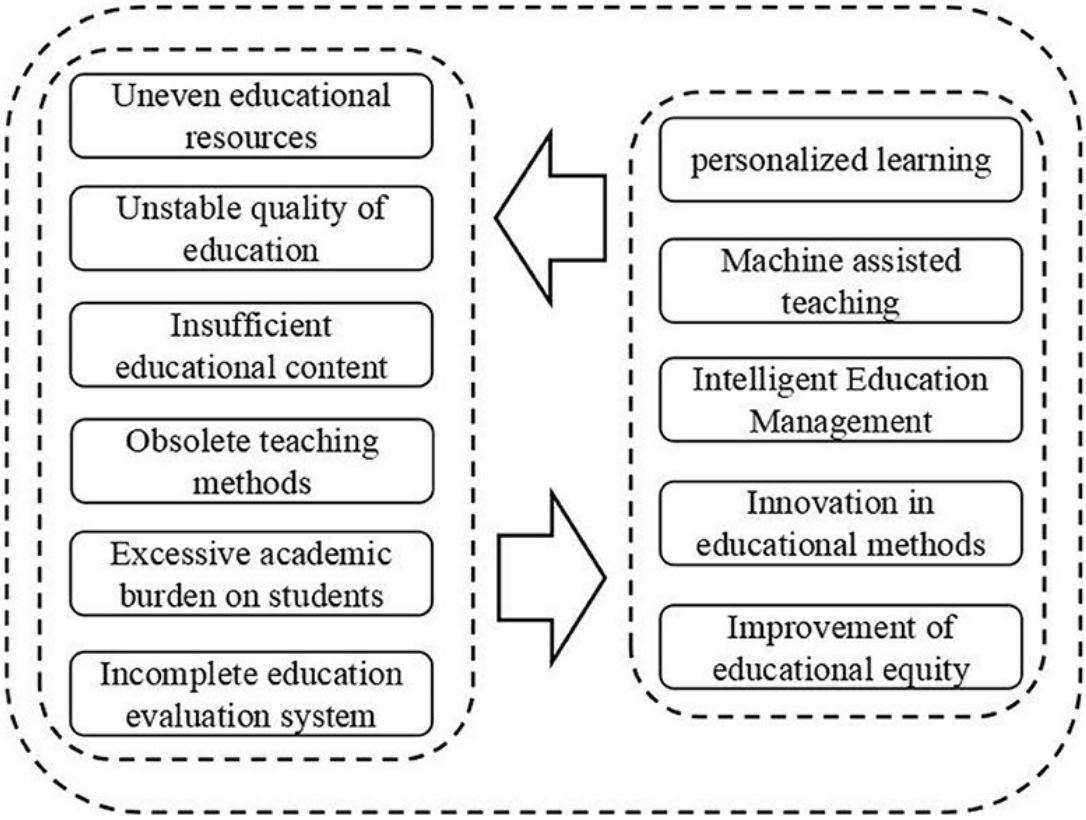
conduct new experiments, foster innovation, and achieve breakthroughs in many areas. However, Yu (2023) also points out that Chat GPT faces obstacles related to bias, origin, and accuracy that need to be overcome

Glaser (2023) notes that ChatGPT can be used in particular to adapt to each student's individual needs and preferences by providing customized content and feedback (Chan and Zary, 2019; Zhai, 2023). This can help students engage with the material more effectively and improve their academic performance. For example, instructors can embed student essays, discussion forum responses, and other tasks into ChatGPT to seek compliance with assignment requirements and look for evidence for the need for further teaching/intervention. This approach has been widely considered in the past (e.g., Uto and Okano, 2020; Warschauer and Grimes, 2008), but faced significant challenges due to limitations in the technology that ChatGPT improved (Vijaya Shetty et al., 2022). In conclusion, it can be stated. That the responsible integration of AI technologies into education can ultimately lead to more innovative, adaptable, and engaging learning experiences for students.

Use of ChatGPT in education

As Yu (2023) suggests, an imperfect educational evaluation system with inconsistent assessment standards does not comprehensively and objectively reflect the actual level of pupils. Therefore, before discussing whether AI should be academically banned, it is essential to fully consider the relationship between AI and education and combine it with the current state of education in order to better evaluate the impact of AI on education

Figure 1: Education issues and the promotion of AI in education.



Source: Yu (2023)

In general, the use of artificial intelligence in education seems to be an inevitable process of improving our skills and knowledge and simplifying the acquisition of information. Like all new technologies, AI has its obvious pitfalls, but that doesn't mean it shouldn't be used or banned. On

the contrary, its potential should be exploited fully and in the context of education in all its areas. In other areas of industry and commerce, ChatGPT has become widely used (Raman et al., 2023).

So far, a handful of articles have been written about the specific use of ChatGPT in education, but they are growing at an exponential rate. ChatGPT and similar AI implementations have huge possibilities, and the aim of our article is to summarize the possibilities of use in education currently (turn of 2023/2024). Certainly, this list is open, and other forms of use and implementation of ChatGPT in the educational process will be added quickly.

Therefore, we have tried to divide the use of ChatGPT into 3 main groups according to the criteria of the user's view:

Use from the perspective of the learner (student, pupil, adult in further education):

- Preparation of homework, papers, presentations, speeches, sketches, poems, texts, diagrams, outlines.
- Assistant in researching, searching, deciding, comparing, synthesizing, analysing, induction, deduction, thought processes.
- Expanding knowledge in the selected field (wide range of fields, professions, scientific research).
- Personal Assistant, Coach, Mentor, Mentor (Different Contexts, Situations, Case Studies, Personal Problems, Work Problems).
- Creation of input data for data processing systems (e.g., test data).
- Analysis and comparison of information, data, correlations, and causalities (statistical tools can also be used to determine them by ChatGPT).
- Creation of communication for various communication channels (e.g. posts, letters, announcements, evaluations).
- Creation of tests on the given issue.
- Fact-checking (according to selected sources, updates, time series, various criteria).
- Creation of videos, case studies, overviews.
- Virtual buddy (discussion based on good advice, recommendations, just talking, humour).
- Writing texts in different ways (scientific style, managerial style, journalistic style).
- Creation of individual study plans (for formal and non-formal education – MOOCs, certification, retraining).
- Finding mistakes in your own work (own texts, programs, translations, drawings, photographs).

Use from the point of view of a teacher, lecturer, andragologist:

- Verbal evaluation based on the input parameters of the evaluated, based on various criteria, based on documents and their analysis (laws, decrees, descriptions).
- Preparation of study programmes, educational projects, courses, lecture system, teaching processes and methods.
- Preparation for lessons, courses, lessons, workshops, preparation of specific syllabus for lessons, curriculum timing proposals.
- Designing tasks, experiments, problems, analyses, sets of examples for different types of teaching.
- Suggestion of motivational tasks for the topics taught, sample examples, sample analyses.

- Creation and assignment of examples, tests, evaluations, KPIs, groups of examples, demonstrations and image documentation.
- Explanation of the nature of things, dependencies, correlation, causality, other mathematical dependencies.
- Personal Assistant, Personal Coach, Personal Advisor.
- Assistant in various teaching methods (e.g., assistant in co-teaching, flipped classroom).
- Spelling corrections, stylistics checking, finding mistakes, finding deeper connections.
- Creation of materials, rules, inspirations, teaching aids, textbooks, experiments.
- Creation of visualizations, communication concepts, design of templates, sample materials.
- Peer review of prepared texts.

Usage from the point of view of an educational organization:

- Communication with stakeholders (parents, companies, owners, etc.), formal and informal communication.
- Project proposals, creation of project plans, creation of project success criteria, project evaluation, follow-up of projects.
- Evaluation of the results of ongoing programmes or initiatives, reminders, quality control of programmes.
- Creation of analyses (SWOT, strategic, financial, thematic, statistical, process analyses).
- Assistance service (hotlines, green lines, voice assistance, assistance with problem solving).
- Administrative assistance (even automation of administration, use of APIs in the integration of systems in educational organizations).
- Assistant in the Public Relations of the organization (creation of marketing plans, recommendations for the 4Ps of the marketing mix).
- Creation of curricula, creation of curricula, courses, certificates, educational programs.
- Plagiarism checker.
- Preparation of budgets, analysis of expenditures and investments, marketing studies, market studies, studies of the attractiveness of the educational organization.
- Creation of recommendations for different contexts and situations, creation of manuals and documentation.

Conclusion

The emergence of ChatGPT in educational research is a relatively new phenomenon. As such, there are only a handful of scholarly articles that have been published on the subject so far. At the time this manuscript was written, only a limited number of findings from educational research involving ChatGPT had been made available in major academic databases and through Google Scholar. Furthermore, among them, only a few examples have been obtained from non-peer-reviewed platforms, underscoring the emerging nature of the field. Although ChatGPT is a powerful tool in education, it cannot completely replace the role of a teacher.

Therefore, the appropriate and effective incorporation of such technology into learning is paramount, along with improving teachers' skills in managing education with technology. The possibilities of its use in education shown in this article reflect emerging research in this area and shed light on how we should approach the coexistence of artificial intelligence and human facilitation in education. In conclusion, the process of integrating ChatGPT into education comes

with its fair share of challenges. Yet, it is these challenges that provide us with opportunities to innovate and improve not only the AI itself, but the entire learning environment. By addressing these issues, we are not only improving the functionality of ChatGPT but also fostering a learning environment that fosters critical thinking, inclusivity, and ethical accountability. Therefore, ChatGPT's game-changing potential lies not only in its capabilities as a tool, but also in the transformative learning process it supports (Zhai, 2023).

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Effectiveness of Selected Crime Prevention Measures from the Perspective of the Adult Population of the Ústí nad Labem Region

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Abstracts:
The paper is focused on the presentation of partial results of the survey entitled Research of Public Opinion in the Field of Crime Prevention in the Ústí Region, which took place at the end of 2022. We focus on the topic of the influence of the age of respondents on the evaluation of the effectiveness of selected preventive measures aimed at reducing crime. The output is findings and recommendations for adult education in the area of crime prevention and increasing the feeling of safety.

Key words:
Crime Prevention, Fear of Crime, Perception of Safety, Adult Education, Ústí nad Labem Region.

Introduction

The need for safety is one of the basic human needs. The feeling of safety or, conversely, the fear of danger is perceived sensitively especially in connection with the place where we live and which we consider home. A feel of security is the basis for well-being, quality of life, but also a necessary prerequisite for the full development of individuals and communities. One of the important sources of disruption of the sense of security is the fear associated with the occurrence of criminal activity and its negative effects (victimization), often referred to as fear of crime.

The Ústí Region is, together with the Karlovy Vary Region, part of NUTS 2 - North West, which belongs to the so-called EU coal regions (Alves Dias et al., 2018) sometimes also called „post-mining regions "(Wirth et al., 2012) or „former mining regions" (Harfst & Wirth, 2011). Within the Czech Republic, it is among the regions with the highest rate of unemployment, the highest incidence of so-called socially excluded localities, as well as the highest rate of poverty and crime (Svoboda & Mikovcová, 2023). The characteristics of the region in the field of education and early school leavings are similarly unfavorable (Svoboda & Volfová, 2023a, 2023b; Volfová, Svoboda et al., 2023; Eurostat, 2022).

Using the comparative index of criminal activity per 10,000 inhabitants, the Ústí Region ranked second among all regions in the Czech Republic in the years 2019–2021, right behind the capital city of Prague. The crime index in the Ústí Region reached 208.4 in 2019 (average in the Czech Republic – 186.7), 181.5 in 2020 (CR – 154.7) and 179.4 in 2021 (CR – 145 ,7). In all years, the value of this index was well above the Czech average. The decrease in the index in 2020 and 2021 is most often explained by the effect of restrictions on the movement of people as a result of the Covid-19 pandemic (Svoboda, Z., Zilcher, L. et al., 2022, compare Stickle & Felson, 2020 or Shayegh & Malpede, 2020).

The Ústí Region can clearly be seen as an area with an increased need to implement programs/interventions in crime prevention and increasing the feeling of safety.

The European Crime Prevention Network defines crime prevention as *ethically acceptable and evidence-based activities aimed at reducing the risk of crime occurring and its harmful consequences with the ultimate goal of working towards the improvement of the quality of life and safety of individuals, groups, and communities* (EUCPN, 2020).

According to UN Economic and Social Council (2002) it is proven that *well-planned crime prevention strategies not only prevent crime and victimization, but also promote the safety of society and contribute to the sustainable development of states. They improve the quality of life*

and bring long-term benefits in terms of reducing the costs associated with the criminal justice system and other social costs resulting from criminal activity.

The framework for the planning and implementation of measures or interventions in the field of crime prevention within communities in the Czech Republic most often consists of national, regional, and local crime prevention strategies. For their preparation and subsequent acceptance by the community, it is necessary to know the opinions of the inhabitants of the given territory on the expected effectiveness of individual preventive measures or their groups. It is thus possible to determine the level of support their implementation will have and to adopt an effective informational and possibly educational strategy towards the public. This is a topic relevant to andragogy.

Methods

Within this part of the research, we defined a causal research problem, which was subsequently verified with the help of five individual causal hypotheses. Due to the number of calculations and the limited scope of the text, we did not purposefully define individual null hypotheses, although we worked with them as standard, to refute possible first- and second-order statistical errors. We always tested the data first against the null hypothesis and then moved on to the factual hypothesis.

Main research question: *What effect does age have on the evaluation of the effectiveness of selected groups of preventive measures to reduce crime?*

The aim was to find out whether increasing age has a positive effect on the evaluation of the effectiveness of preventive measures in selected areas of crime prevention and increasing the feeling of safety.

Hypothesis:

H1: *The older age of the respondents has a positive effect on the assessment of the effectiveness of measures in the area of non-specific prevention.*

H2: *The older age of respondents has a positive effect on the evaluation of the effectiveness of measures in the area of specific social prevention.*

H3: *The older age of the respondents has a positive effect on the assessment of the effectiveness of measures in the field of situational prevention.*

H4: *The older age of respondents has a positive effect on the evaluation of the effectiveness of measures in the area of personnel measures.*

H5: *The older age of respondents has a positive effect on the evaluation of the effectiveness of measures in the field of strengthening repression.*

In the framework of the questionnaire (online and physically), the respondents, among other things, on a six-point scale (where the value 1 meant "definitely no" and the value 6 "definitely yes") evaluated to what extent the selected proposed measures could contribute to a real reduction in crime. The proposed measures were divided into 5 thematic areas.

The area ***Non-specific prevention*** included the following proposed measures: *"Construction and equipment of freely accessible sports fields and areas", "Establishment of (leisure) facilities for children and youth" and "Support of renowned organizations bringing together children and youth (e.g. Scout)".*

The Specific Social Prevention area included measures *"Support of other social prevention facilities (K-centers, asylums, hostels)", "Field social work in endangered locations" and "Programs to support youth from socially disadvantaged families".*

The field of ***Situation Prevention*** also consisted of three proposed measures, namely *"Improving the quality of public lighting", "Surveillance of public spaces with cameras" and "Using personal alarms for the elderly or other vulnerable groups".*

The area we called ***Personnel Measures*** included two measures aimed at strengthening the personnel capacities of the state and municipal police for patrolling the streets *("More municipal police officers on the streets" and "More police officers of the State Police on the streets").*

The last area, called ***Strengthening Repression***, included a proposal for two measures aimed at toughening the punishment of people who commit crimes, namely *"Construction of new prisons or expansion of their capacity to incarcerate more offenders"* and "*Reintroduction of the death penalty for serious crimes"*. The research survey was carried out at the end of 2022 and a total of 2,631 people aged 15 and over participated in it. Regarding the focus on the adult population, we evaluate only persons aged 18 and over in this research. The research sample thus includes 2260 respondents.

Minimum quota sampling was used to construct the research sample. This took into account age categories, the size of the residence and the district in which the respondents have permanent residence. A total of 95 categories of respondents were determined, in which it was necessary to achieve at least a minimum representation, namely at least eight respondents for a given category (in most of them the final number was significantly higher). For the needs of this article, we worked with respondents relevant to the field of andragogy, i.e. with adults aged 18 and over. The sample of respondents included a total of 2260 people, who were divided into 4 age categories, designated as K1-K4 (Chart 1).

Chart 1: Characteristics of the research sample by age and gender (N=2,260)

	18–29 (K1)	**30–44 (K2)**	**45–59 (K3)**	**60+ (K4)**	**Total**
Women	329	611	451	216	***1607***
Men	178	173	185	117	***653***
Total	507	784	636	333	***2260***

Source: own processing

It is evident from the overview that women were significantly more often represented in the sample, which confirms generally known trends. Smith (2008), Curtin et al. (2000) point out the fact that women are generally more willing to participate in questionnaire surveys than men; Moore & Tarnai (2002), who also point out that younger people are more likely to participate than older people (Moore & Tarnai, 2002).

As part of the data analysis, we were based on the opinion of the authors Robinson and Levin (1997) or Onwuegbuzie, Levin, Leech (2003), who place great emphasis on statistical significance. As part of the statistical significance assessment, we used together Shapiro-Wilk normality test and Kruskal-Wallis test for comparing more than two groups of independent data samples. We use Dunn's method for post hoc analysis.

Results

Due to the number of calculations, we proceeded to a more space-saving interpretation of the results of the inductive analysis, which are presented together for all investigated hypotheses (Chart 2).

Chart 2: Results using the Kruskal-Wallis test

Monitored areas	Kruskal-Wallis test
H1 *Non-specific prevention*	H (3, N = 2260) = 39.87504; p = **0.000**
H2 *Specific social prevention*	H (3, N = 2260) = 12.83456; p = **0.005**
H3 *Situational prevention*	H (3, N = 2260) = 9.590257; p = 0.022
H4 *Personnel measures*	H (3, N = 2260) = 23.00915; p = **0.000**
H5 *Intensification of repression*	H (3, N = 2260) = 20.20297; p = **0.000**

Source: own processing

Due to the aforementioned results and the high number of respondents, we decided to work only at the one percent level of significance in the context of the Kruskal-Wallis test. Based on the p values in the chart above, we could reject the null hypothesis H10; H 2 O; H40 and H50 and then move on to post-hoc analysis, thereby simultaneously moving on to substantive hypotheses.

Since H3 would be statistically significant only at the five percent level of significance, we did not further evaluate it.

Overall, based on the post-hoc analysis, it can be concluded that statistically significant differences in the influence of age on the evaluation of preventive measures were manifested in four of the five monitored areas (except for the area of Situational Prevention). We used the results of a descriptive data analysis to confirm the hypotheses in terms of the positive influence of older age on the evaluation of the effectiveness of selected preventive measures (Chart 3).

Chart 3: Results of descriptive analysis in relation to hypotheses

Age	N	Avg.	Min	Max	SD	N	Avg.	Min	Max	SD
	Hypothesis 1					***Hypothesis 4***				
18-29	507	9.873	3.000	18.000	4.120	507	9.147	2.000	12.000	2.988
30-44	784	10.410	3.000	18.000	4.176	784	9.794	2.000	12.000	2.677
45-59	636	11.073	3.000	18.000	4.153	636	9.904	2.000	12.000	2.638
60+	333	11.426	3.000	18.000	4.393	333	9.840	2.000	12.000	2.740
	Hypothesis 2					***Hypothesis 5***				
18-29	507	11.467	3.000	18.000	4.141	507	7.496	2.000	12.000	2.951
30-44	784	11.614	3.000	18.000	4.210	784	7.359	2.000	12.000	3.119
45-59	636	11.847	3.000	18.000	4.108	636	6.805	2.000	12.000	3.217
60+	333	10.807	3.000	18.000	4.325	333	7.597	2.000	12.000	3.103

Source: own processing

In the area of ***Non-specific Prevention***, where the measures focused primarily on supporting the purposeful use of free time for children and youth, there were statistically significant differences in the evaluation between the youngest adults in the K1age category compared to K3older adults (p =.000) and the oldest age group with a significant representation of K4 seniors (p =.000). In the same vein, there were differences in the ratings of younger adults K2 compared to the K3 age group (p =.014) and the K4 age group (p =.000). The results of descriptive statistics show that respondents in the youngest age category rate the expected effectiveness of preventive measures in the area of non-specific prevention as lower than in the case of both older age groups. The same result also applies to K2 group, which is more skeptical than K3 and K4 groups in evaluating the expected effectiveness of measures in this area. We can thus confirm hypothesis H1.

In the area of ***Specific Social Prevention***, the proposed measures focused primarily on supporting social prevention services. Their target group is primarily persons who are in an unfavorable social situation and are at risk of social exclusion (in more detail Kříž et al., 2021; Svoboda & Zilcher, 2019). Differences in ratings were evident between the K2 and K4 age groups (p =.037), similarly to the K3 and K4 groups (p =.002). In both cases, the K4 age group, with a significant representation of seniors, showed a lower overall evaluation of the expected effectiveness of preventive measures in the given area. This age category also showed the overall lowest rate of expected effectiveness of preventive measures in the area of specific social prevention. Therefore, hypothesis H2 cannot be confirmed.

The ***Personnel Measures*** area included preventive measures consisting in increasing the number of members of the State Police (Police of the Czech Republic) and municipal police officers. In this area, the evaluation of respondents in the youngest age category K1 (18-29 years) differed statistically significantly from the evaluation of all three other age groups (K2: p =.001; K3: p =.000 and K4: p =.004). Thus, it can be concluded that young adults are the least likely of all age groups to believe that an increase in the number of state police officers will lead to a decrease in crime. Therefore, hypothesis H4 can be confirmed.

In the field of ***Strengthening Repression***, the proposed measures were oriented towards punishment, which is also generally attributed with preventive potential (Štefunková, 2015). In this area, there was a difference in the evaluation of older adults in the K3 category and the evaluation of all three other age groups (K1: p =.005; K2: p =.005 and K4: p =.001). Respondents

who made up this age group are the most skeptical about the positive impact of increased repression on the reduction of crime. However, considering the results of the descriptive analysis, hypothesis H4 must be rejected.

Discussion and Conclusion

As part of our research, it was confirmed that in most relevant areas of crime prevention, the evaluation of the expected effectiveness of the proposed measures differs depending on the age of the respondents. Thus, it was possible to answer the basic research question and we can state that the goal of the research was fulfilled. Increasing age and increasing life experience have an effect on the positive assessment of the mechanisms of non-specific crime prevention, i.e. a concept that is significantly based on the support of adequate use of free time, a healthy lifestyle or support for the development of interests (cf. Smolík, 2016).

A positive effect of age on the assessment of the expected effectiveness of preventive interventions was also noted in the case of measures consisting in increasing the number of police officers in a given city or village. This finding is fully consistent with the results of domestic and foreign studies, which confirm that the physical presence of police officers on the streets is perhaps the most important measure for strengthening the feeling of safety (Holas & Večerka, 2003). Overall, we can state that the respondents most positively accept the measures consisting in the increased presence of police officers on the streets, together with the use of situational prevention mechanisms. These elements are also the basis of the approach referred to as community policing (Kappeler, Gaines & Schaefer, 2020).

An interesting positive result is the overall low rate of the expected positive impact of increased repression and punishment. Kury (2008) draws attention to the fact that the deterrent effect of punishment is often overestimated, even though it has been repeatedly proven in research that the tightening of sanctions for violating the law does not decrease proportionately. According to Štefunková (2015), exemplary punishments that are not perceived as fair by society have a negative effect rather than a preventive effect.

In the group of respondents aged 60 and over, with a significant representation of seniors, the lowest level of expected effectiveness of measures in the form of support for social prevention services was identified. One of the reasons may also be that society often perceives and marks the funds spent on social services in socially excluded locations as funds that should be allocated to services for the elderly or people with medical disabilities. It is towards this age group that the need to implement this type of intervention must be sensitively explained. Especially in the Ústí Region, where the negative perception of socially excluded localities and their inhabitants is very strong (Svoboda, Zilcher et al., 2022).

Jurystová (2015) points out that when planning and implementing prevention programs, implementers must respect the fact that the context of their implementation is not static, on the contrary, it can change significantly over time. It is therefore necessary to consider the local specifics, the specifics of the given target group and the circumstances of the implementation. We also consider it necessary to educate the adult population in the area of the benefits of crime prevention. In this area, we also see a significant field of action of contemporary andragogy.

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Education in the context of a media society

Lenka Pasternáková

Abstracts:
A school is an institution that helps the development of an educated individual. Democracy presupposes the availability of education for all people. Humanism requires increasing the influence of education in the field of education based on heuristic learning with an emphasis on emotional and motivational education. Science presupposes the creation of educational content based on the latest scientific knowledge, which forms a coherent, logically organized whole. All these attributes are important in relation to education and training in a media society.

Key words:
Education, learning, society, media, critical thinking, online learning.

Introduction

Along with the development of humanity, the forms of upbringing and education also changed. The relationship between upbringing, education and society is two-way. Education as a deliberate socialization keeps society stable, but at the same time it is also an instrument of change, ensures renewal, or reproduction and innovation of society. Teaching is gradually changing under the influence of modern technology (Day, 1999; Jonson. 2008). The blackboard has been replaced by data projectors, the teacher, pupils and students have at their disposal computers and their associated internet, video camera, etc.

The aesthetic and technical side of the teaching process begins to dominate over the content side. Moral discipline from previous times has disappeared from families and educational practices are more liberal. Pupils get more space for free decision-making, although sometimes at the expense of parental authority. However, this is also a consequence of the time and society in which today's parents live. The pressure on work performance, the material demands of today's people and other factors also affect family education to a large extent (Turek, 2014; Porubčanová, 2016).

1. Factors influencing the media society

Economic conditions determine the conditions of both family and institutional education. The limited financial possibilities of families often lead to failure in raising children, or result in the inability to provide for their basic needs. In this context, the question of raising and educating children from a socially disadvantaged environment is being discussed today. The functioning of many schools is directly dependent on the economic situation in the country or region. Sufficient or insufficient investment is reflected in the very operation and equipment of schools, in personnel capacities and overall educational offer (Miškolciová, 2008).

The value climate of society, in which parents raise children and teachers influence pupils and students, is also important (Graham, 2002). This climate determines the importance attached to education, which then affects the conditions of school education, the teacher's work, his social status or the evaluation system. The information society could be characterized by the increase in information technologies. In this society, the influence of the media world on people is growing and affects all spheres of social life: culture, economy, politics, and education. The school also responds to new branches of science, which tries to meet the needs of the labor market and opens new fields. In the information society, preparation for a profession did not remain only a matter for secondary and higher schools. It also sneaks into elementary schools and even kindergartens. Controlling a computer or the Internet is already considered part of basic literacy. However, the question must be asked whether pupils and students can gain knowledge and education by surfing

the Internet or watching television (Barnová, Čepelová, & Gabrhelová, 2019; Veteška, & Tureckiová, 2020).

The teacher must look for new, more creative ways to help the student not only acquire knowledge, but at the same time understand the relationships between them and their connection with the real world. The information explosion and dissemination also forces the teacher to constantly monitor progress and respond to children's cognitive needs. With the current possibilities that a person has (Internet, encyclopedias, television), he must be ready to answer often difficult questions.

On the other hand, differences in the cultural background of families often divide classes into those who lack elementary knowledge and those who go beyond the boundaries of the basic curriculum. The teacher therefore has to differentiate teaching more than before, which also changes the organization of teaching. It also has to cope with the management of information technology itself. The current school tries to stand up to the competition and attracts parents with its equipment. Their use in the educational process depends on the teacher's ability to use it. Better is the one who can put together and project a more engaging presentation (Dupkala, & Ambrozy, 2022).

In today's educational process, in addition to the teacher, electronic media such as: television, computer, Internet, mobile play a huge role. Society is beginning to realize not only the enormous benefits these media have brought to man, but also the risks associated with them. The value world is changing. Inappropriate content, warns Emmerová, & Jablonský, (2020), which is broadcast on television, increases aggression in children, inappropriate patterns arise.

The main characters of TV series and movies embody idols that children want to be like. A rather often emphasized negative of television is its manipulative power, it distorts the view of children and childhood. A computer game can be a suitable educational aid and a rare didactic material. Nevertheless, a big problem with computer games is the risk of escaping from the real world into the virtual space. The educational dimension is offset by an element of entertainment.

By using the Internet, we can access a huge amount of information in a relatively short time. But children and young people are increasingly using the Internet, and not only for the purpose of getting to know each other. This medium serves them to establish contacts, direct communication. However, the Internet is a different environment than the real world, and therefore human behavior in it is also different, and therefore at the same time it also brings new risks such as: lying, vulgarity, aggressiveness, merging of childhood and adulthood, weakening of the power of authority, disclosure of privacy, acceleration pace of life, weakening of reading literacy.

Almost everyone uses a mobile phone today. It also serves as a portable computer on which, for example, a child can play his favorite game or write a message. Rapid development also made it possible to connect to the Internet. This multi-functionality accumulates the problems we have already pointed out. The nature of people's communication is also changing. The school also reacts to the mentioned facts related to the dynamic growth of media influence on children and youth. Media education is included in the teaching.

Globalization is a complex process that is closely related to the development of information technologies and expanded possibilities for communication and information exchange. One of the significant manifestations of globalization, to which the school also responds, is the gradual disappearance of national consciousness, especially among young people. Spatial mobility arises. Borders between states are becoming fictitious, and modern people have virtually no obstacles to free movement. Increased human migration is not the only cause of loss of national consciousness and pride. Other factors also enter here, such as the influence of multinational companies, the influence of the media, weakened historical knowledge. Today's society is often referred to as a performance company. The reason is a preference for performance at the expense of quality. This phenomenon is also observable in education and science. However, education and school must respond to negative social phenomena and look forward. Already today, the forecast is sounding

that the more and on a larger scale the globality of the world grows, the more the desire of nations for independence manifests itself (Nagyova, & Harcarikova, 2014; Chráska, 2016).

2. Social environment and media society

A whole set of factors influence a person's upbringing and education. Important factors include the social environment. It consists primarily of the family environment: family, school, church, extracurricular institutions, associations and associations, peer groups and, last but not least, the educational and educational influence implemented by means of mass communication (mass media, internet) (Veteška, Kříž, & Koubek, 2020).

The family is an important environment for raising and educating children and youth, as we have already mentioned. With the development of society, the nature of the family also changed. According to Act no. 36/2005 Coll. about the family, the family is founded by marriage, it is the basic cell of society and it is protected by society. Parents have the right to raise their children in accordance with their own religious beliefs. They have an obligation to ensure a peaceful and safe environment for the family. The school is a purpose-built, according to the founder, public, state, church or private institution to ensure the upbringing and education of children and youth and their right to education. In a modern democratic society, it fulfills an extended socio-pedagogical function, not only narrowly educational, but also broader educational-counseling, cultural-educational, social and economic. The function, goals, tasks, position and organization of the school are historically conditioned, resulting from the changing needs of society, from the level of knowledge and the possibility of applying the sciences of education and training (Ally, & Tsinakos, 2022). The school has a professionally prepared education and training program, which is implemented by qualified teaching staff. Schools of individual types and grades form a comprehensive school system, which is part of the educational system.

It is clear that there is no one type of cooperation and interpersonal relations between teachers and parents. Some parents prefer passive participation in school events, others want to participate in school events. From this point of view, according to Lukáč (2021) and Miština, Jurinova, & Hrmo, (2018), we recognize five basic types of parents and their attitudes towards cooperation with teachers:

1. A parent who avoids cooperation with the school;
2. A parent who does not accept invitations to school is indifferent to cooperation;
3. A parent who needs encouragement and support to establish cooperation with the school;
4. A parent who wants to cooperate with the school and comes with his own ideas and suggestions;
5. An overly active and authoritative parent who would like to dominate and control the school cooperation alone.

Four levels of cooperation between the school and parents can also be distinguished:

1. Systematic provision of information to parents about what is happening at school and the personal development of their child (e.g. through class teachers, educational advisor or class teacher;
2. Programs of cooperation with parents and teachers (e.g. professional orientation of the student – choice of secondary school);
3. Active cooperation of parents in school events (interesting activities, trips, parties);
4. Reciprocal education of parents and teachers (Svobodová, Veteška, & Dvořáková, 2022).

The school's attitude towards cooperation with parents mostly depends on two conditions (Billett, 2012). The first condition is that parents must understand teachers as the most important persons in their children's lives and must be willing to subject their work to criticism and demands and subsequently respond to their wishes and possibly accommodate them. The second condition is the ability of teachers to clearly formulate and defend their work in front of parents. The cooperation of parents is very important in solving disciplinary offenses and in the case of a pupil's learning problem (Radulovic, Jovanovic, & Gadu, 2022).

The quality of the relationship between the family and the school is important for the mutual coordination of efforts to get to know the student and, on this basis, to choose the right educational means that would eliminate undesirable characteristics and behavior of the student (Argyris, 1999). The family environment generally lags behind the purposeful theoretical-normative action of the school environment. In it, the child gets to know concrete life with all its positives and negatives, and indirectly also becomes familiar with the contradictions in interpersonal relationships that are usually manifested in social interaction. On the other hand, the school guides students to know and especially to understand more general norms of behavior, to realize what the ideal person's profile is and what their function is in the reality of social relations. An ideal requirement of the unified influence of school and family is formulated, which expresses more effort than reality.

Today, the idea of the unified action of school and family is understood, because ideal harmony can hardly be achieved here. Nevertheless, the goal remains at least to harmonize the educational activities of the school and the family in such a way that at least approximately a uniform procedure is reached in the fulfillment of common educational goals. It is the duty of the school to get to know the family environment and to actively respond to everything important that could lead to undesirable educational consequences. The further, the more it will be necessary to develop such forms of cooperation between school and family that would allow the teacher to know and respect the conditions of families (Suharni, Taruno, & Khairudin, 2017).

3. Education and contemporary society

We found ourselves in a situation we had never been in before (Garvin, 1991). The situation related to the recent pandemic has also significantly affected the field of education. With the advent of the pandemic, schools had to change their teaching method from week to week (Casalone, & Baici, 2023). In many cases, the role of teachers was represented by parents. The need to stay at home and prevent the spread of the disease also brought new situations and challenges to teachers. One of them was to ensure the continuation of classes as if the children were present at school. The only possible choice for mediating the curriculum was the use of electronic means. Probably the biggest challenge was the lack of technical equipment. Our country was not at all prepared for such a huge leap in online education. To implement this type of education, we need high-quality and fast internet and equipment. However, not every student has the same conditions for education in this regard. Many families may lack technical equipment and access to the Internet.

Access to technology was also limited for students whose parents worked from home or who shared a device with siblings. In families with many children, not every parent can afford to provide their own computer for each of their children. Technical equipment caused problems during the pandemic not only for students, but also for teachers themselves. In 2019, our teachers would never have thought that they would be speaking to pupils and students from their homes every day. Teachers were mostly dependent on their own computers, but many students lacked them completely. Unsuitable conditions of the home environment represent a significant obstacle for pupils when interrupting face-to-face teaching. For example, a certain part of households is currently without a connection to the electricity network.

Among other things, the family may have more siblings from other grades or high school students who could not participate in online classes at the same time, or even some children from ordinary families lack a space where they could study in peace at all. Access to the Internet and a suitable device alone is not a sufficient condition for participation in online teaching. In order for students to have access to online learning, not only they, but also teachers must have sufficient digital skills. For many teachers, especially older teachers, digital skills and the use of digital technologies in learning are a big problem. The completely opposite picture in the current state of crisis is presented by schools and teachers who have already used various innovative methods, digital tools and means to improve learning. These schools got into the new digital education very

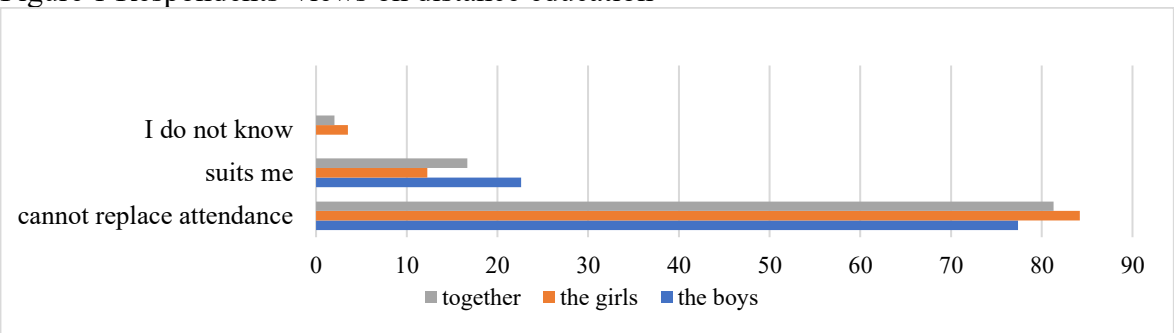
quickly. In our opinion, technical problems are a problem that neither teachers nor students have avoided, and it significantly reduces the quality of teaching. A particular problem is the fees for the internet connection, which were borne by the teachers at their own expense. Many had to buy more expensive data packages for the sake of teaching and spend them at the expense of their own families.

Uninformed and uncoordinated use of distance learning by the school is another problem we could encounter, which had a negative impact on students and their parents, but also on the teachers themselves. One of the frequent problems is excessive load. Due to the uncoordinated procedure at the school level, pupils were given a large number of assignments, as a result of which a large part of the responsibility for education was transferred to parents. Parents working at home, in addition to their own work, solved their child's technical and organizational problems in order to get in touch with teachers, replaced the teacher's tasks, supervised school preparation, and devised leisure activities for their children. In this way, the stress in the households themselves increased even more. Teachers who also had to take care of their own children could feel the excessive burden. Lack of motivation, lack of attention or even problematic behavior of pupils, this was something teachers commonly encountered even before the pandemic, but we are of the opinion that during distance education these facts deepened even more. During online classes, students are under less supervision and are often influenced by impulses that can distract them from learning and reduce their motivation to learn. Unlike high school students, university students are interested in learning, as they know that no one will force them to do so.

Fortunately, the pandemic came at a time when, thanks to technology, physical distance between people plays almost no role in communication. If it had happened a few years earlier, it would have been a significantly bigger problem. From the beginning, we probably all had a lot of respect for this change to distance learning and we couldn't quite imagine how it could all work. Today, however, we think it was a big step forward. We have to admit, however, that distance learning suits many in the end. Some of us didn't have to commute tens of kilometers every day, our travel costs were reduced... In connection with the analyzed issue, we conducted a survey, the purpose of which was to find out the opinions and experiences of student respondents with education that was implemented online during the pandemic. We were therefore interested in the evaluation of distance education by the respondents.

198 respondents took part in the research, of which 57.58% were girls and 42.42% were boys. We determined the research objective through a questionnaire that we compiled. For example, we asked the respondents what their opinion is about distance education. As many as 81.31% of the respondents said that distance education cannot replace face-to-face education. 16.67% answered that this form, i.e. distance learning, suits them. As many as 22.62% of male respondents gave this answer. But 77.38% of the boys said that the distance form of teaching cannot replace the face-to-face one that we were used to. As many as 84.21% of girls hold the same opinion. Only 12.28% of girls are satisfied with distance education. 3.51% of female respondents could not comment on this question. Through these answers, we can conclude that the student respondents prefer the face-to-face form of teaching over distance learning.

Figure 1 Respondents' views on distance education



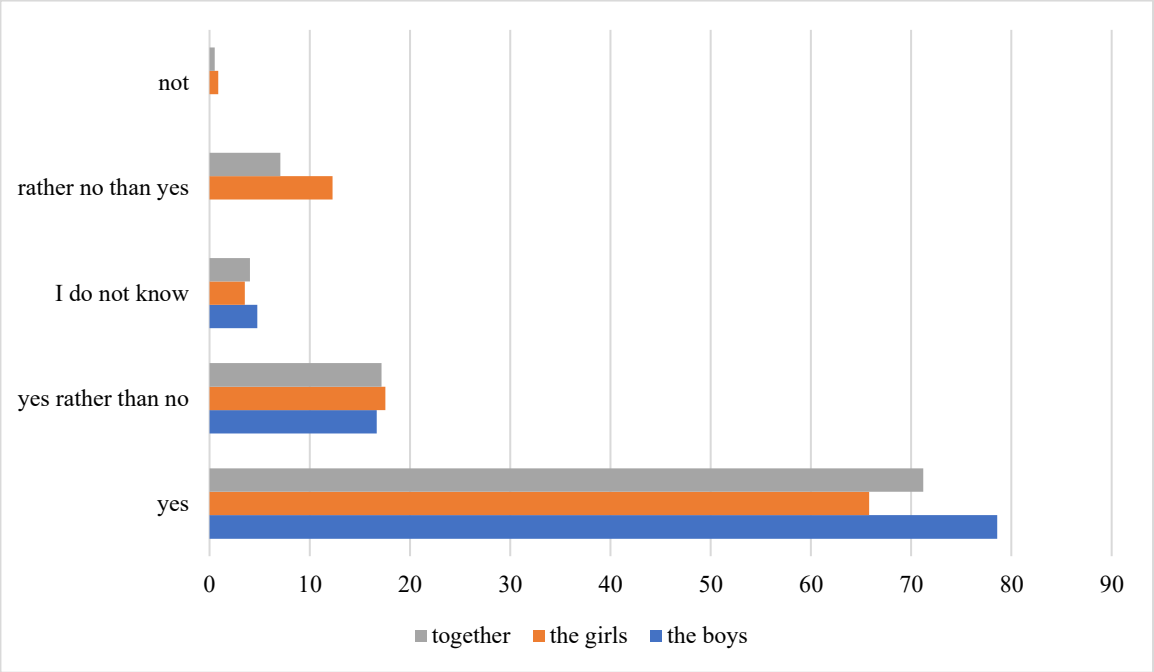
Source: Own processing

Respondents who took part in the research could also comment on the evaluation of teachers during the distance form of teaching. We wanted to know if the evaluation of the teachers was, for example, more moderate compared to the one given to the students during traditional teaching.

As many as 71.21% of respondents said that the evaluation of teachers is milder during the distance form of teaching. This opinion is held by more male respondents: 78.57% than female respondents: 65.79%. 17.17% of respondents answered "yes rather than no" to this question. Likewise, girls: 17.54% and boys: 16.67% marked this answer similarly. 4.04% of all respondents could not answer this question. We also recorded the answers: 7.07%, which confirm that the respondents are of the opinion that the evaluation of their teachers during the distance form of teaching "is rather not milder, compared to the face-to-face form of teaching".

This was answered by 12.28% of female respondents and not a single male respondent. There was also one answer from the questionnaire "no" to the question of whether the evaluation of teachers is milder during the distance form. It was the answer of the respondent.

Figure 2 Evaluation of teachers according to respondents



Source: Own processing

The Internet has become an indispensable part of our lives. If we just look at how education or many jobs are currently going, we will understand that we would be lost without the Internet. It provides us with education directly from home as well as a substitute for going to work. We can state that it has never been used as permanently as it is now in the present era. It is no longer just about having fun through social platforms or finding the information we need, the internet has become our source for everything we need in our daily lives. It may sound like a perfect tool for humanity, but the respondents pointed out that there are worse realities that the Internet offers and covers the very positives.

We can also state that society has found a way to turn the Internet into a threat. In addition to all the beneficial tasks that the Internet offers us and fulfills, there are also negative facts such as the aforementioned social networks. It is the Internet that is often the mediator of misleading information, which has more than once caused an uproar in the world. From the experiences of the respondents, which they pointed out, the biggest problem and the topic that is most analyzed in connection with the Internet is bullying, threats, blackmail and other forms of harm.

The fact is that since the emergence of social platforms of various kinds, the percentage of suicides has increased, youth experience depression or anxiety at a young age, children are more

aggressive and tend to compare themselves or hurt others. The reason is that we see other people presenting their lives, showing how happy they are, what they have and putting us in the position that our lives are not good enough. Society has somehow determined what is good and what is not good enough, how we should dress, look and what we should think about everything around us.

Conclusion

Currently, education is experiencing one of the worst tests, we dare to say that perhaps the most difficult since World War II. world war. The whole world recently faced a common invisible but even worse enemy (Vaughan, O'Neil, & Cameron, 2011). That enemy is the coronavirus, which has significantly affected perhaps all sectors of social, political or working life. This pandemic has caused enormous damage in almost all spheres. Education has also been adversely affected to a large extent, whether in our country or in the world. Our education system was not prepared for such a form of online study.

The absence of modern equipment for teaching, the transmission of online classes, low knowledge of using computer equipment or programs among teachers, pupils and students were and continue to be major negatives that limit the education process during the pandemic. In this context, it is important to emphasize that every day we learn to work with these new technologies and in the future we will be more experienced and smarter.

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Social interactions versus artificial intelligence and online environments – the current challenge of teacher education

Ingrid Emmerová

Abstracts:
The study describes the current state of risky behaviour of pupils in relation to the online environment, as well as problems in the field of interpersonal relationships among pupils. The author presents selected results of research with teachers, with special attention to their educational needs. Practicing teachers should participate in training activities focusing on the educational possibilities of modern technologies as well as the prevention of risks in the online environment.

Key words:
Educational needs of teachers, risky behaviour of pupils, online environment, negatives and risks of online environment, prevention of risky behaviour in school, further education of teachers.

Introduction

In addition to its many benefits, modern technology and artificial intelligence have also brought a number of risks or threats to children and young people, especially adolescents and adolescents. It is the Internet and the online space that affect adolescents and adolescents to a high degree. The Internet, and social networks in particular, represent a significant platform for shaping the minds and values of children and young people. The strong influence of the Internet is also presented by the popularity of YouTubers and influencers, their influence in both positive and negative ways.

The Internet is a real part of children and young people's lives. Šavrnochová, Almašiová, & Holdoš (2023) investigated how much time pupils spend online on average. They found that during the week it is an average of 5.01 hours per day for respondents from socially disadvantaged backgrounds and 4.73 hours per day for respondents from the general population, and during the weekend it is an average of 5.97 hours per day for respondents from socially disadvantaged backgrounds and 6.06 hours per day for respondents from the general population.

1. The current state of risk behaviour of pupils in relation to the online environment

Primary and secondary school pupils see the Internet and information technology as a normal part of their lives and actively use Internet services. Their use brings various negatives, especially for children and youth (Juszczyk, 2014; Kopecký, Střílková, Szotkowski, & Romero-Rodríguez, 2020; Walsh, & Tener, 2022). In relation to the virtual environment of the Internet, Dulovics (2018) highlights two basic levels of risky behaviour: risky use of the Internet and risky behaviour in the Internet environment.

The most attention in the theoretical and empirical literature is devoted to cyberbullying. Research on cyberbullying among pupils (in terms of its occurrence, forms, causes, as well as prevention and solution) in Slovakia has been conducted mainly by Hollá, & Hanuliaková (2017), Niklová, & Makúchová (2018) and others, abroad, e.g. Kopecký, & Szotkowski (2015), Strohmeier, & Gradinger (2022), Wachs, Whittle, Hamilton-Giachritsis, Vazsonyi, & Junger (2018). Sexting is also closely related to cyberbullying, as confirmed by the results of several research studies (Frankel, Bass, Patterson, Dai, & Brown, 2018; Hollá, 2020).

Hate speech on the internet is referred to as cyberhate. It can be the dissemination of texts or videos that promote or justify extremism, xenophobia or racism. Pupils do not realise how cyberbullying can affect the victims themselves.

Pupils also experience manifestations of intolerance and extremism. Janková (2023) presents the results of research which confirmed that some pupils aged 12 to 18 years have hostile attitudes towards certain groups of people who differ in skin colour, nationality or religious beliefs. In 2022, pupils in the highest numbers were confronted with hostile attitudes because of their views and appearance. According to Pétiová (2023), there was an increase in the number of pupils who are occasional visitors to extremist websites and a slight decrease in the number who do not follow them.

Young people are suitable victims to be easily influenced; extremism becomes a threat to them. A current problem affecting primary and secondary school pupils is online radicalisation, the spread of propaganda and communication with extremists in cyberspace.

Experts point out that pupils have problems in the areas of interpersonal relationships and social competence.

Gajdošová (2023) describes the "child of the new millennium" as technologically very advanced. He receives a lot of stimuli, a lot of new knowledge, he has a lot of partial information, but his knowledge is fragmentary and he does not understand many connections, he is tired from so much information, he is motorically restless, unable to concentrate. Many pupils are often unable to resolve ordinary life conflicts and stressful situations with classmates, peers, teachers, parents or siblings in a sensible, calm and morally correct manner, and more often than not they resolve problem situations aggressively. They make serious mistakes in social communication and use such negative emotions as anger, irony, sarcasm, hostility or hostility when communicating.

In this regard, Pasternáková (2019) states that the online world is for them their second world in the real world. For children and young people, it is extremely pleasant and also attractive to belong somewhere, to be able to express their own opinion, to share content they like, to show off something new and to be able to remain anonymous many times while doing so.

Dulovics, Niklová, & Zošáková (2023), in the context of virtual threats to children and youth, draw attention to the problem of hikikomori - a phenomenon characteristic of Japan, but widespread in other countries as well. It is the social isolation of adolescents and young adults in their home spaces. It is a serious form of social withdrawal. Young people are very active in the online world, but online communication does not require direct human contact. In hikikomori, the focus is on social isolation and the loss of the need to communicate with someone; the internet is a means of contact with the outside world. Considerable attention has been paid in the literature to defining it and establishing diagnostic criteria (Kato, Kanba, & Teo, 2018, 2020; Tan, Lee, & Teo, 2020; Tateno, Teo, Ukai, & Kanazawa et al., 2019; Teo, & Gaw, 2010).

A particular problem, also in the context of artificial intelligence, is school e-cheating. Ambrožová (2020) points out that more attention in this regard is paid to university students, there is relatively little interest in e-cheating or plagiarism among primary and secondary school students, and there is a lack of objective research.

2. Educational needs of primary and secondary school teachers in Slovakia (Methodology and Interpretation of results)

From October 2022 to March 2023, at the Department of Pedagogy and Psychology, Faculty of Education, KU in Ružomberok, we conducted a research among primary and secondary school teachers focused on the safety of the school environment, including an analysis of the educational needs of teachers in this area (N 384 respondents).

The most frequently occurring areas in which respondents would like to be educated are:

- Addressing pupils' problem behaviour
- Effective preventive work in school
- School and family cooperation
- Teacher-pupil communication
- School discipline
- Social-emotional education and the development of pupils' soft skills

- Stress and its solution, burnout syndrome
- Effective conflict resolution.

The respondents' statements show that teachers are most interested in the issue of dealing with risky or problematic behaviour of pupils, while in free answers they mostly specified the issue of aggressive behaviour and bullying of pupils. This is followed by the area of effective prevention, specifically prevention activities with the whole class focusing on improving relationships. The demanding nature of the teaching profession is confirmed by the high number of respondents who would welcome educational activities on stress management and burnout syndrome, as well as effective conflict resolution. The area of cooperation with the family was frequently mentioned, with some respondents specifying "with a family from a socially disadvantaged background" or "from marginalised Roma communities".

The fact that teachers are interested in completing further training is a positive development. Veteška, & Kursch (2019) stress the need for new requirements for lifelong learning and teaching in the context of the rapid changes of the times and the need to promote adaptation and motivation for change in continuing education.

In the research, we also investigated the prevalence of problem behaviours among primary and secondary school students from the perspective of teachers. The results of our research confirm its occurrence. The results concerning aggressive behaviour and bullying of pupils are a serious fact. The occurrence of aggressive behaviour very often, weekly was reported by 23.70% and bullying by 5.47% of teachers, 1-2 times a month it was 26.04% for aggressive behaviour and 13.80% for bullying. Our research confirmed the trend of transferring aggressive behaviour to cyberspace.

Our findings are consistent with the results of research with primary prevention educators and lecturers (Bělík, 2022). Among the themes that they believe should serve as a basis for the prevention of risky behaviour they included: anxiety and fear, increasing psychological problems and problems with the perception of well-being, a greater incidence of phenomena related to the cyber environment, an increase in self-harm and eating disorders, communication problems, defining boundaries in behaviour, and social activation of families.

The prevention of risky behaviour is an integral part of the school curriculum. The results of Nováková and Orosová' (2023) research on prevention activities and teachers' current prevention needs suggest that teachers need professional guidance and workshops in this area.

Kolek, & Veteška (2018) point out the high demands placed on company members in terms of flexibility, but also the level of education, which allows for great competitiveness in the labour market. One can agree with Pasternáková (2018), according to whom the requirements for practice-oriented education are coming to the fore. Teachers need to be aware of the importance of lifelong learning and adapt to change, monitor and evaluate their own success in their learning, be aware of opportunities for further education, and think holistically.

Conclusion

The requirement for continuous teacher education is becoming particularly relevant; teachers should participate in training activities and develop their competences in a targeted way. The value and andragogical aspects of teachers' continuing education are also pointed out by Veteška, Kolek, & Hrudkaj (2017). It is essential to offer teachers educational activities on the current topic of artificial intelligence, risks as well as educational possibilities of the online environment. As Gracová (2015) states, the motivation to learn depends on the programs offered, the content of which will match the needs of the participants.

Preventive action in schools is now of particular importance. In addition to specific prevention, aimed at individual types of problem behaviour, non-specific prevention is also needed in schools. This includes developing pupils' social skills, promoting effective problem-solving and conflict resolution, developing social communication, empathy and assertive behaviour. Working in and with a group of pupils makes an intensive contribution to this.

The advantages of preventive work with a group of pupils include the use of group dynamics, socialization of group members, social learning and the promotion of pupils' social development. Group relations influence the individual and by influencing group relations the school climate and the educational process are improved. Preventive work with a group of pupils increases understanding and appreciation for the feelings of fellow pupils, pupils can be convinced that expressing feelings has communicative value, they practice open and functional communication, they understand that people can have different opinions about things.

As Petlák (2023) points out, education to date has focused mainly on hard skills - a set of knowledge and skills. Soft skills are less appreciated, e.g. the pupil's level of communication, adaptation to the situation, interest in cooperation with others. It is their development that can be considered as non-specific prevention. Soft skills are those competences or skills that are acquired through life experiences and also through social contacts, in the family, at school, in groups, etc. These skills are not tied to the specificity of a particular job or activity, but contribute significantly to its quality (e.g. decisiveness, flexibility, diligence).

In schools, it is not enough to eliminate risky behaviour of pupils, it is also necessary to implement activities to promote social relations between pupils in the classroom, as well as between pupils and teachers.

Teachers need to actively use modern technologies in the educational process because, as Pasternáková (2015) states, the success of students largely depends on how teachers master and effectively use different teaching methods.

Pupils are digitally proficient but not sufficiently media literate. Teachers need to teach pupils to use modern technologies ethically, to prevent virtual threats and risks, and last but not least to help pupils to function in real interpersonal relationships. It is therefore essential to actively educate in this area.

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Educational activities with focus on the development of digital skills in selected enterprises

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Abstracts:
The aim of research was to establish the duration of training activities in hours on average per employee, per year in individual groups for the support of administrative tasks, development of ICT skills, skills of data collection, data processing and data analysis skills, and for the improvement of training. The questionnaire method was applied. Results of calculations indicate the time spent on digital training is not reflected in the improvement of work results or in the changes in performance.

Key words:
information and communication technologies, education, digitalisation, digital skills performance, assessment

Introduction

The present-day period of globalization and digitalisation influences the labour market and is manifested by means of increasing demands on information and communication technologies (ICT) skills. These skills are often part of the economic model focused on the paperwork reduction, digitalisation of processes and support of innovations. All of these changes necessitate the development of educational activities, in which a dominant place is occupied by digital skills (Digital Skills Insights, 2020; Helsper, et al., 2015; Ndubuisi, Ikechukwu, & Ezeani, Chukwuebuka, 2022). According to the evaluation of the European Commission, skills and innovations stand for one of the areas in which the Slovak small and medium-sized enterprises lag behind most. (European Committee, 2010; European Investment Bank, 2021; Slovak Business Agency, 2020)

Economic prosperity of enterprises of various sizes is a dynamic process, which requires novel solutions. New technologies increase the effectiveness of various activities, contributing this way to acceleration of production processes and improving the quality of final products and services provided (Huang, et al., 2023; Veteška & Kursch, 2021; Yang, 2023). In the context of further corporate professional education, there are organised several educational activities with focus on the support of performance oriented education, support of soft skills and key competences. Digitalisation of society and transition to Industry 4.0 exert pressure on enterprises to support educational activities enhancing digital literacy (Pegrum, 2010; Pozdnyakova, et al., 2019; Soumyashree, et al.,https://www.researchgate.net/profile/Anuj-Gupta-10 2023;Tinmaz et al., 2022; Wang & Li, 2023). The national occupational classification contains also requirements on digital skills needed for work performance, which are considered in new employee recruitments (Národná sústava povolaní, 2004). However, there are a lot of employees working in enterprises, who likewise the new employees have to master relevant ICTs. The present research paper contains results of empirical analysis, with focus on digital literacy development. The first systematic discussion about digital skills and digital literacy was presented by van Dijk et al. (2014), who analysed roles of digital skills and offered their application on various levels, including an educational one (van Dijk, et al., 2014).

Empirical research was performed in the form of pre-research stage, which involved obtaining basic information from selected employees, who cooperated in designing the questionnaire for the research in educational activities for supporting digital literacies in small and medium-sized enterprises. After the evaluation of the questionnaire, we obtained quantitative data necessary for evaluating the current situation. Verbal data were acquired during our interviews with selected respondents, which enabled us to complete statistical quantification.

1. Methods

Development of employee digital skills can be considered an extension of qualification. These skills are required for the performance of all activities. In the present paper we intend to identify the educational activities organised by enterprises in accordance with the need for the developing their employees' digital skills. The focus of research is on administrative staff from section N – Administrative and support services, divisions 78 – Job mediation and 79 –**Travel agency, reservation services of travel agencies, and related activities** (Statistical Classification of Economic Activities, SK NACE, 2007). The research was implemented by means of the questionnaire method; the questionnaires were distributed electronically as well as physically. Respondents were line managers, some of whom were selected to participate in the pre-research and also cooperated in developing the questionnaire. We divided educational activities into four basic groups (see Table 1).

Table 1: Implementation of digitally-oriented education

Educational activities for digital skills development			
Support of administrative tasks	Developing skills for working with ICTs	Acquisition of data collection, data processing and data analysis skills	Improvement of training
SAP training	Cybernetic safety – safety at work with systems, internet law	Excel training	Interactive games for education
Designing documents in MS Office, mastering essential office programs	CPS systems – systems integrating physical and digital world	Adobe training	Using virtual reality – augmented reality (AR) in education
VPN Strengthening (virtual private network)	Chat GPT – AI conversation tool, AI implementation & application	Microsoft SQL training (SQL – Structured Query Language)	Foxario – intelligent solutions for modern education
Linkedin platform	Skills for working with social networks	Analysis in v PowerBI	FineCreator – web tool for designing online courses; produced by an enterprise using pictures, videos or quizzes.
CogniPay system			Supervisor – web application for monitoring online exams, testing or certifications from home.
			VOXY platform serves for online interactive language instruction through listening and writing but also group lessons (EDU Trainings, 2022).

Source: pre-research results

Table 1 contains the most frequently implemented educational activities in the group of analysed enterprises.

Each group of educational activities was examined in terms of the duration in hours, on average per employee, per year. Seven time brackets were created, and respondents were expected to mark the relevant ones.

Table 2: Time brackets of implementing individual educational activities

Response value	Number of hours on average per employee per year
1	Up to 5 hours
2	from 6 to 12 hours
3	from 13 to 19 hours
4	from 20 to 27 hours
5	from 28 to 34 hours
6	from 35 to 40 hours
7	Over 41 hours

Source: pre-research results

Enterprises spend a lot of time and finance to develop digital skills of their employees. Results of their training should be also reflected in the change of the performance of procedures and separate activities, which, in turn, is again manifested in the increase in the performance of individuals, teams, work teams, departments, as well as in that of the entire enterprise. We explored respondents' opinions concerning the impacts of educational results.

Results of education were divided and evaluated by respondents with focus on education in terms of the support of administrative tasks, the development of skills of working with ICTs, the acquisition of data collection, data processing and data analysis skills, and improvement of training. Respondents assessed results achieved in 0 − 5 interval, while individual degrees were defined as shown in Table 3.

Table 3: Assessment of educational results by respondents

Degree of assessment	Assessment description
0	No changes observed
1	An individual's performance was improved.
2	Work performance of employees who perform a given type of job was improved (across job positions and departments).
3	Improvement of work performance is observed in teams, in which one person at least has been trained.
4	Improvement of work performance is observed in departments, intracompany units, etc.
5	Improvement of work performance is observed in the entire company.

Source: pre-research results

The description of the research model, which was worked out by authors in cooperation with selected respondents, was followed by the questionnaire survey. The aim of research was to establish the duration of training activities in hours on average per employee, per year performed in individual groups for the support of administrative tasks, development of skills of working with ICTs, skills of data collection, data processing, and data analysis, and for the improvement of training.

We characterised hypotheses on the basis of starting points as follows:

First hypothesis:

H0: The number of hours spent on education for the support of administrative tasks does not affect the change in work results.

H1: The number of hours spent on education for the support of administrative tasks affects the change in work results.

Second hypothesis:

H0: The number of hours spent on education for the development of skills of working with ICTs does not affect the change in work results.

H1: The number of hours spent on education for the development of skills of working with ICTs affects the change in work results.

Third hypothesis:

H0: The number of hours spent on education for the acquisition of data collection, data processing and data analysis skills does not affect the change in work results.

H1: The number of hours spent on education for the acquisition of data collection, data processing and data analysis skills affects the change in work results.

Fourth hypothesis:

H0: The number of hours spent on education for the improvement of training does not affect the change in work results.

H1: The number of hours spent on education for the improvement of training affects the change in work results.

Data were statistically processed in Excel and Jamovi programs (Hanák, 2016).

2. Results

The empirical research was focused on exploring the relationship between the number of hours (on average per employee, per year) of digitally oriented training of 61 respondents in division 78 and 53 respondents in division 79 and the impact in the improvement of work with clients, decrease in the time needed for the work performance and the increased number of clients. For descriptive statistics we used EXCEL program. Surveys of the duration of training in hours on average per employee, per year are presented in tables below.

Table 4: Scope of training in hours for the support of administrative tasks on average per employee, per year

Response	Training hours for administrative tasks	Division 78	Division 79	Total respondents
4	from 20 to 27 hours	6	4	10
5	from 28 to 34 hours	18	13	31
6	from 35 to 40 hours	16	15	31
7	over 41 hours	21	21	42
	Total	61	53	114

Source: Research results processed in Excel

Table 5: Scope of training in hours for developing skills for working with information and communication technologies on average per employee, per year

Response	Training hours for administrative tasks	Division 78	Division 79	Total respondents
1	Up to 5 hours	1	-	1
2	from 6 to12 hours	1	4	5
3	from 13 to19 hours	5	15	20
4	from 20 to 27 hours	18	16	34
5	from 28 to 34 hours	15	5	20
6	from 35 to 40 hours	16	12	28
7	over 41 hours	5	1	6
	Total	61	53	114

Source: research results processed in Excel

Table 6: Scope of training in hours for developing the skills of acquiring, processing and analysing information on average per employee, per year

Response	Training hours for administrative tasks	Division 78	Division 79	Total respondents
4	from 20 to 27 hours	5	4	9
5	from 28 to 34 hours	8	9	17
6	from 35 to 40 hours	22	18	40
7	over 41 hours	26	22	48
	Total	61	53	114

Source: research results processed in Excel

Table 7: Number of training hours spent on education for education improvement on average per employee, per year

Response	Training hours for administrative tasks	Division 78	Division 79	Total respondents
3	from 13 to19 hours	13	6	19
4	from 20 to 27 hours	31	33	64
5	from 28 to 34 hours	17	14	31
	Total	61	53	114

Source: Research results processed in Excel

The data above indicate that employers pay the greatest attention to the support of administrative tasks and to the acquisition of data collection, data processing and data analysis skills. To verify this statement, we calculated other indicators, namely median and modus (see Table 8), processed in Jamovi program.

Table 8: Descriptive statistics broken down into divisions in terms of the time spent by employees for educational activities

Statistical indicator	Groups of educational activities							
	Administrative tasks		ICT skills		Information skills		Learning skills	
	Division		Division		Division		Division	
	78	79	78	79	78	79	78	79
Median	6	6	5	4	6	6	4	4
Modus	7	7	4	4	7	7	4	4

Source: Own processing; The Jamovi project (2022). Jamovi. *(Version 2.3) [Computer Software]. Retrieved from https://www.jamovi.org*

We calculated median and modus also for individual divisions of section N – Administrative and support services. In the case of administrative tasks and education for the acquisition of data collection, data processing and data analysis skills, the most frequent value of the number of hours is 41+ hours. In developing the skills for working with ICT as well as for using ICTs in skills development, we obtained the number of hours in the interval from 20 to 27 hours on average per employee, per year. The calculation of median characterises the medium value. Results in both divisions are comparable with the difference in the skills development in section 78, where median is the interval of period of training from 28 to 34 hours on average per employee, per year.

Based on the results of modus (which expresses the most frequently occurring value) calculation, it can be concluded the impact of training for the improvement of work performance

is most frequently achieved in teams, in which one member at least has taken the training, namely the training for the support of administrative tasks, for the development of ICT skills, and for the acquisition of data collection, data processing and data analysis skills. The same results are achieved also for individual divisions, as shown in Table 9.

Table 9: Descriptive statistics of post-training evaluation of results by respondents

Statistical indicator	Groups of educational activities							
	Administrative tasks		ICT skills		Information skills		Learning skills development	
	Division		Division		Division		Division	
	78	79	78	79	78	79	78	79
Median	4	3	3	3	4	4	3	4
Modus	3	3	3	3	3	3	3	5

Source: own processing; The Jamovi project (2022). Jamovi. *(Version 2.3) [Computer Software]. Retrieved from https://www.jamovi.org*

Based on Table 9, the difference can be seen in the improvement of training through information and communication technologies, where, given the proper use of the training, an improved performance can be achieved, which is recorded in the entire company. In the case of division 78, line managers perceive the improvement in work performance in teams in which one member at least has been trained. Median indicates the medium value which ranges either in the improvement of work performance in teams, in which one member at least has taken the training and the improvement of work performance in departments and in individual intracompany units.

For testing hypotheses, we used the calculation of Pearson's coefficient for the training for the support of administrative tasks, for the development of ICT skills, for the acquisition of data collection, data processing and data analysis skills, and for the improvement of training in relation to the results evaluated by line managers.

Table 10: Calculation of Pearson's correlation coefficient

Indicator	Training for the support of administrative tasks
Results after the training for the support of administrative tasks	Pearson's r = - 0.018 p-value = 0.848
	Training for the development of ICT skills
Results after the training for the development of ICT skills	Pearson's r = 0.137 p-value = 0.146
	Training for the acquisition of data collection, data processing and data analysis skills
Results after the training for the acquisition of data collection, data processing and data analysis skills	Pearson's r = 0.034 p-value = 0.723
	Training for improvement of training
Results after the training for the improvement of training	Pearson's r = 0.129 p-value =0.172

Source: Own processing; The Jamovi project (2022). Jamovi. *(Version 2.3) [Computer Software]. Retrieved from https://www.jamovi.org*

Based on the calculated Pearson's coefficient and *p* value that achieves higher values than 0.05, we have to adopt zero hypotheses for all the groups of training types. The time spent on digital education does not influence the changes in work results.

3. Discussion

The contemporary knowledge-based society as well as the needs of company transformation to Industry 4.0 necessitates that companies are involved in their employees' education. As the results of our calculations indicate, the time spent on digitally oriented training analysed in our empirical research is not reflected in the improvement of work results or in the changes in performance. Respondents explain this phenomenon by the situation of employees who return to the same unchanged setting after the training as well as to their run-in way of working, since conditions for applying the knowledge obtained during the training have not been created yet. Alternatively, they carry out their tasks in two ways, using both traditional and new methods, creating thus duplicity.

Another reason is that not even line managers are able to evaluate the effect of trainings as they do not have time needed for the assessment of changes. In the case of section N− Administrative and support tasks and its divisions 78 (Work mediation) and 79 (Travel agencies, reservation services of travel agencies and related activities), it is vital that employees take trainings in digital skills in view of changing procedures and processes. Despite the results of Pearson's coefficient calculations, we have to emphasize that digital skills belong to key qualifications; they create the qualification extension; moreover, without the knowledge and skills of digital literacy nowadays, it is impossible for institutions analysed in the present research paper to provide services.

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Adult media literacy as an andragogical issue – an overview study

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Abstracts:
This paper deals with the current state of research into adult media literacy as an integral part of the theory and practice of citizenship education of adults in the context of an analysis of some key international and national strategic documents. The authors strived to identify media literacy and its elements in the selected national and international documents. The research sample consisted of 5 important strategic documents, which influence the implementation of citizenship education of adults as well as media literacy development in the adult population.

Key words:
media literacy, adult education, citizenship education, adults, overview study

1. Introduction

Today's world is full of stimuli generated by printed but now mainly electronic media. Lack of information is not a problem anymore. On the contrary, the problem is our ability to process this information effectively and evaluate it critically; in other words, its interpretation is necessary for a person to successfully integrate into their social and work life. This ability is one of the most important life skills and requires a certain level of media literacy, which is developed through formal and informal education. Media literacy is considered one of the key competences necessary for the 21st century (Glas et al., 2023).

In the context of formal education, media education can take the form of a separate academic subject or a cross-sectional topic integrated into the educational content at various levels of the education system. In the context of informal education, adults can develop media literacy within its subsystems.

Adult education has been attracting increasing attention. Mainly international structures (e.g., European Union, OECD, UNESCO) are putting increasingly more effort into supporting adult education. Citizenship education of adults has become particularly important and its goals can be summarised as follows:

1. development of social, citizenship, and intercultural competences by promoting democratic values and active citizenship;
2. improvement of critical thinking and media literacy to build resistance to discrimination and indoctrination;
3. support of education for disadvantaged citizens;
4. promotion of intercultural dialogue through all forms of education (European Commission/EACEA/Eurydice, 2016).

This classification implies that the development of media literacy has a legitimate position within the concept of citizenship education of adults and adult education in general. Citizenship education of adults comprises activities and education aimed to support active citizenship, i.e., to help citizens learn how to respond to social changes and develop citizenship competences (Krystoň & Sládkayová, 2018; Beran Sládkayová & Neusarová, 2022a, 2022b).

Based on the content analysis of relevant Slovak and foreign sources, it can be stated there is no single definition of media literacy. It can be summarised as follows: media literacy comprises the knowledge and skills necessary to process information resources, information search and analysis, understanding of the information collected, its critical evaluation, the ability to distinguish between actual and distorted information (authors' note: true and false information, dis/misinformation, etc.), comparison of news from different sources in order to develop an opinion or attitude to a specific issue (Rožukalne, Skulte & Stakle, 2020).

Media literacy refers to a set of "skills and abilities necessary for responsible media use. Media literacy integrates critical thinking and recipients' attitudes to media and their contents in terms of moral principles and humanism, thus allowing them to use media for their own benefit to satisfy their own needs and interests" (Balážová, 2012, p. 7).

Although media literacy is often confused with media competence or media education, it is not a new concept or a phenomenon specific exclusively for today's society. References to media literacy can be found in a variety of international documents, e.g., Grunwald Declaration (1982), Convention on the Rights of the Child (1989), or European Charter for Media Literacy (2006) (according to Balážová, 2012). According to Glas et al (2023), Škripcová (2022), Belvončíková & Čiderová (2022), Cho et al. (2022), Rasi, Vuojärvi & Rivinen (2021) Kendall & McDougall (2012), this area is becoming increasingly important and gains attention. However, the current state of media literacy does not reflect its declared importance. Numerous studies point out that the development of media literacy is too slow and individuals (in all age groups) are becoming more susceptible to manipulation and sharing of false (unverified) information (Media Literacy Index, 2021). In the recent years marked by the pandemic, war in Ukraine and other social events, which influence the shape of society (authors' note: in Slovakia, the recent parliamentary elections and creation of the new government). In general, people suffer from information and dis/misinformation overload, which creates mental pressure on the individual. Social media play a significant role in this aspect, as young adults use them constantly, which influences their behaviour and perception of the risks related to low media literacy. Young adults use social media to maintain relationships and tend to trust people within their personal network. University students use media to satisfy their needs related to entertainment and partially also as information sources (Eger et al, 2020).

Based on some disunity (in media literacy definitions) among media literacy experts (e.g., Koltay, 2011; Grombly & Anderson, 2020; Glas et. al., 2023), the increasing attention paid to this problem, and the facts explained above, this study aims to determine how national and international documents address the topic of media literacy.

2. Methods

This study presents an analysis of media literacy and its treatment in important strategic and legislative documents on the national and international levels. The partial goals were to identify the goals of media literacy and determine its importance.

Since this study employs a qualitative research design, two questions were formulated:

1) What are the goals of media literacy?

2) How do the documents analysed characterise the importance of media literacy?

To achieve the goals and answer the research questions, the method of content analysis was applied. Content analysis of documents can be used as a separate method or an additional to collect supplementary data via interviews or observation (Hendl, 2005). According to experts in research methodology (Hendl, 2005; Silverman, 2005, Gavora, 2006; Průcha, 2014), the basic types of documents used for content analysis are as follows:

- current documents,
- retrospective documents,
- primary documents,
- secondary documents,

This study analysed the current documents created by the European Union, UNESCO, UN, and other international organisations as well as Slovak national documents. The qualitative content analysis explains the contents of the text and identifies trends.

The research sample consisted of 5 documents, 2 were Slovak, and 3 internationals. An overview can be seen in the following table.

Table 1 List of the documents analysed in terms of content

document type	document name	year of publication
Slovak	The strategy for life-long learning and counselling for 2021–2030	2021
	National programme for active ageing for 2021 – 2030 – NPAS II	2021
International	Council of Europe Recommendation on key competences for lifelong learning – European reference framework	2018
	Manifesto for Adult Learning in the 21st Century: The Power and Joy of Learning	2019
	CONFINTEA VII Marrakech Framework for Action Harnessing the transformational power of Adult Learning and Education	2022

Source: Own processing

The research sample was collected based on the following criteria:

1. document importance (national or international strategic document)
2. document topicality (published within last 5 years)
3. focus on adult population (primarily or partially)

As for quantity, there are fewer strategic documents on the national level than on the international one. In this aspect, the research sample is disproportional.

3. Results

The analysis of the selected national and international documents focused on the identification of the goals and importance level of media literacy. Each document will be presented separately and its description will include the specification of parts related to media literacy.

1) *The strategy for life-long learning and counselling for 2021–2030 (2021)*

This document defines two "Main areas" related to the accessibility of life-long learning (p. 6). In area no. 1 "Building an effective adult education system in the context of the culture of life-long learning in the Slovak Republic with the emphasis on supporting informal education and individualised approach", "3 approaches to main intervention areas" were identified. One of them is focused on the "support for the selected skill areas", which include the basic, transferrable, digital, and citizenship skills (p. 6). In the context of developing citizenship skills, "which do not get enough attention despite its importance for the state, citizenship skills including media and financial literacy help build trust towards the institutional system of the democratic society" (p. 9). Media literacy is explicitly specified in the enumeration of the "basic skills and key competences" comprised by the citizenship education of adults (p. 54), which also covers: "different types of literacy for practical life – digital, media literacy, financial literacy, consumer

literacy, health literacy, etc.". The basic component of media literacy, i.e., development of critical thinking is also referred to. A contextual link can also be found between media literacy development and combating hybrid threats or even more general protection and security (ibid p. 54).

2) *National programme for active ageing for 2021 – 2030 – NPAS II*

Educational activities are not only an integral part of this programme, but also one of the domains pertaining to promotion of active ageing. From the perspective of education (including citizenship education of adults), domain no. 2 is of key importance: "Supporting human resources throughout the lifecycle", specifically in Objective 3: Education geared towards older people, enhancing their employability or relevance in the labour market, which accepts the key trends of the fourth industrial revolution". This Objective covers 3 measures:

Measure 1: Supporting the development and implementation of education programmes promoting key competences for life-long learning with an emphasis on digital literacy, personal development, and mental health in the context of the labour market and employment.

Measure 2: Implementation of the Digital Skills Development Programme for the Elderly within the Digital Coalition and by the IT Fitness Test

Measure 3: Implementation of financial literacy education programmes for the elderly through the established counselling points in client centres (pp.19–20).

3) *Council of Europe Recommendation on key competences for lifelong learning – European reference framework (2018)*

Key competences are defined as those needed by all people for personal fulfilment and development, employability, social inclusion, sustainable lifestyle, successful living in a peaceful society, focus on health and responsible life management, and active citizenship (p.7). In this document, media literacy is explicitly specified in the description of the digital competence:

1. The digital competence includes not only the general ability to operate digital technology, but also confident, critical, and responsible use of digital technology for education, work, and participation in social life. This comprises information and data literacy, communication and cooperation, media literacy, digital content creation (including programming), security (including digital well-being and competences related to cybersecurity and intellectual property, problem-solving, and critical thinking (p. 9).
2. Basic knowledge, skills, and attitudes related to this competence.
    a) Individuals should understand how digital technology can facilitate communication, creation, and innovation, and also what opportunities, limitations, influences, and risks they carry. They should understand the general principles, mechanisms, and logic of the developing digital technology and know their basic functions as well as use of different devices, software, and networks. Individuals should approach the validity, reliability, and influence of information and data accessible digitally in a critical way and they should also be familiar with the legal and ethical principles related to the use of digital technology (p. 9).
    b) Individuals should be able to use digital technology to support their active citizenship and social inclusion, cooperation with others, and creative approach to achieving their personal, social, or business goals.
    c) This requires the ability to access the digital content, use, filter, evaluate, create, program, and share it. Individuals should be able to control and protect information, content, data, and digital identities as well as recognize different software, devices, AI, and robots and use all of these effectively.
    d) The use of digital technology and digital content requires a reflective and critical, but also curious, open-minded, and prospective approach to its development. Moreover, it requires an ethical, safe, and responsible approach (p. 10).

Media literacy is also referred to in relation to the characteristics of *citizenship competence,* specifically, the development of abilities necessary for critical thinking and integrated problem-

solving, argumentation skills, constructive participation in community activities, but also decision-making at all levels – from local and national to the European and international levels. It also comprises the ability to approach traditional as well as new media critically, learn to use them, and understand the role and functions of media in democratic society (p. 11).

However, secondary references to media literacy can be found in the descriptions of other competences as well:

1. *Competences related to mathematics, science, technology, and engineering* – these competences should allow individuals to understand the benefits, limitations, and risks of scientific theories and applications as well as technology in societies in general (in the context of decision-making, values, moral questions, culture, etc.) (p. 9).
2. *Competences related to cultural awareness and expression* – they include understanding and respect for the fact that ideas and meanings can be expressed creatively and permeate other cultures through art and other cultural forms. It involves active understanding, development, and expression of one's own opinions as well as the ability to identify one's own place or role in society in a variety of ways and contexts (p. 11).

4) Manifesto for Adult Learning in the 21st Century: The Power and Joy of Learning (2019)

This document emphasizes the benefits of adult education as well as the opportunity to develop transformative skills/abilities offered to individuals who participate in it. This document describes 9 key areas of adult education.

Media literacy is part of the following areas:

1. active citizenship and democracy – adult education is the tool for the development of critical thinking and empowerment, a lively and inspired civil society, knowledge, and know-how. Adult education also provides the space to develop active citizenship. We need adult education to reflect on societal situations and challenges, in order to learn from prevailing European issues such as increasing radicalisation, migration and social inequalities. These issues have shown that democratic attitudes, tolerance and respect need to be reinforced. Critical thinking is also at the heart of understanding a digital world, which demands a prominent level of *media literacy* (p. 5).
2. life skills for individuals – EAEA, together with members and partners, has developed a "framework of life skills", which demonstrates the need for lifelong and life-wide learning for everyone. Based on new economic, technological and societal developments, we will all have to update our life skills. Adult education transforms lives and provides new opportunities. It opens new job opportunities, provides the pathway to learning, helps early school leavers return to education, activates people's artistic and cultural passions and leads to health and well-being. These life skills include *digital capabilities.*
3. being familiar with a computer supported and web-based environment and able to use digital tools, media and resources, e.g., to find information, solve practical tasks, create digital content and products, and manage data – having a critical understanding of the nature, techniques and impact of media messages (p. 10).

5) CONFINTEA VII Marrakech Framework for Action – Harnessing the transformational power of Adult Learning and Education (2022)

By adopting the Marrakech Framework for Action at the Seventh International Conference on Adult Education on 17 June 2022, representatives of more than 140 countries committed to make the vision of a right to life-long learning real. They committed to significantly increase adult participation in learning and recognised the need for increased investment into adult education. The Marrakech Framework for Action determines the key areas of activities necessary to achieve this goal within the following decade. UNESCO members states will strive to implement the right to life-long learning and enhance adult education management and quality by promoting increased investments.

Media literacy is explicitly referred to in the section titled „Action recommendations for transformative Adult Learning and Education"; Point 39 states: "We further highlight the importance of active and global citizenship, and of media and information literacy, in tackling societal and development challenges. We therefore encourage initiatives to strengthen citizenship education for adults with the aim of developing learners' capacities to critically evaluate information, make informed decisions, develop agency, and contribute significantly to their local communities and public debate" (p. 10).

4. Discussion and conclusion

In this research study, the authors strived to point out the importance of adult media literacy in the context of citizenship education of adults and draw attention to the fact that the existing strategic documents do not pay enough attention to this issue. In terms of the content analysis of the selected documents, not only explicit, but also secondary and partial references to media literacy were searched for. It can be concluded that despite ongoing research and the declared emphasis on this area, in the legislative and strategic documents, media literacy remains merely a secondary "object of interest". In this part of the paper, the results of the analysis performed will be summarised and compared to similar research studies.

Two national strategic documents were analysed. *The strategy for life-long learning and counselling for 2021–2030* is a key document for the Slovak education policy for the upcoming decade. Among other topics, it also defines the contents of life-long learning, which is primarily focused on the economic development of society. In the strategy, which defines the life-long learning process, media literacy is only referred to twice. Generalised media literacy is referred to in the segment ("area") of citizenship education of adults and characterised as "a basic skill and key competence of citizenship education of adults". Secondary contextual links to media literacy can be found in the calls for the development of critical thinking, combating hybrid threats, or generalised protection and security.

The second strategic document analysed was the *National programme for active ageing*. Although NPAS II does not explicitly refer to media literacy, the content analysis of its provisions identified contextual links in it:

1. the call for active participation of older people in social, civic, political, and economic processes, or elimination of the barriers that complicate or prevent it.
    a) Only a tenth of older people in Slovakia are interested in political participation of civic engagement, which is below the EU28 average. In the social participation summary domain, Slovakia scored slightly below the EU28 average as well (16.1% vs. 17.9% respectively) (pp. 14–15).
2. promotion of personality development and mental health among older citizens in a broader context of improving their quality of life
3. protection from or elimination of various kinds of risks including manipulation. In this context, media literacy can be related to the development of digital and financial literacy:
    a) The findings about older people's digital literacy and their ability to use today's communication tools and technology in the digital era are important. Their lack of digital literacy may hamper their access to public resources and services, necessary information, and social participation tools – not only in paid jobs, but also in a wide scope of individually and socially beneficial activities (p. 14).

In general, it can be stated that the national legislative and strategic documents analysed only address adult media literacy marginally, mostly in the context of other areas such as life-long learning, citizenship education, or preparation for the old age.

As for international documents, three strategic ones of key importance for adult education were analysed. The first one was the *Council of Europe Recommendation on key competences for lifelong learning* – a complex document with cohesive contents and a logical internal organisation.

It determines the framework of life-long learning based on an analysis of the changing conditions and in turn, educational needs in a broad social and economic, cultural, and political context.

The fact that the complementarity of individual competences for life-long learning is repeatedly emphasized can be considered progressive. The meaning, goals, and functions of media literacy is characterised.

Besides explicit references to media literacy as a key component of digital and partially also citizenship competence (i.e., anchored in citizenship education of adults), the following attributes are specified:

1. critical thinking;
2. the ability to perceive phenomena and information within a broader sociocultural context;
3. recognition of the potential, limitations, and risks pertaining to different forms of social communication;
4. emphasis on argumentative interpretation of the received and shared content;
5. responsible decision-making based on verified sources, etc.
6. These attributes are integrated in multiple other key competences (literacy, mathematical, scientific, technological, and engineering competences; business competence, cultural awareness and expression) – see the links above.

The second document was the *Manifesto for Adult Learning in the 21st Century: The Power and Joy of Learning.* This document aims to promote a Learning Europe, which will acquire all necessary skills, knowledge, and competences to deal with the future (EAEA, 2019). This document specifies 9 key areas, which need to be developed through adult education. As explained in the previous part, media literacy has become part of active citizenship development. According to this document, today's European citizens face a variety of challenges including the overload of freely accessible online sources, which carries certain risks. Without proper development in media (digital) literacy, citizens are unable to respond appropriately and participate in public life. Therefore, media literacy is specified as one of the key life skills necessary for every individual.

The third international document is *CONFINTEA VII Marrakech Framework for Action – Harnessing the transformational power of Adult Learning and Education,* a report from an international UNESCO conference, which provides recommendations. Although this document connects media literacy to the literary one and is referred to only once, the importance of the document as such deserves to be pointed out. More than 1,000 participants including presidents, ministers of education, and top-level UN representatives participated at the conference organised by Morocco in Marrakesh from 15 to 17 June 2022. UNESCO called for a new social agreement on education, which is why the participants discussed about the ways to use the transformative power of adult education and education for long-term sustainable development in the context of challenges such as the climate crisis, rapid technological progress, and changing world of labour. The Marrakech Framework for Action determines the key areas of activities necessary to achieve this goal within the following decade. UNESCO members states will strive to implement the right to life-long learning and enhance adult education management and quality by promoting increased investments. Therefore, the Marrakech Framework is of key importance on terms of the ongoing development of media literacy because it is directly related to the challenges addressed at the conference.

To conclude, despite the declared importance of the development of media literacy, neither national nor international documents deal with this area in detail. On the other hand, it should be emphasized that experts and relevant organisations are working hard to address this issue in research, for example, the *Media Literacy Index* published by the Open Society Institute Sofia (last updated in 2023). This document annually summarises the results of research into the development of media literacy in 41 European countries. In 2023, this index was expanded to cover 47 countries (Australia, Canada, Japan, Israel, South Korea, and the US were included). Individual countries are ranked based on their scores in the 4 basic indicators – media freedom,

education, trust, and new forms of participation. This kind of information is immensely helpful in the formulation and creation of educational programmes for different target groups with the aim to facilitate society-wide progress.

As for the limitations of this overview study, it was purely theoretical. Due to the methodology used, practical recommendations would not be supported properly. However, it can be stated that the area of media literacy obviously requires proper attention at both national and international levels. Today's society is widely affected by the rapid technological development (for example, the progress of artificial intelligence and its potential for misuse). Society needs individuals equipped with proper media literacy to respond to the changing world, where it is necessary to differentiate true and false information. This study can provide a basis for further empirical research into this area (e.g., the level of media literacy development).

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Life success in the context of artificial intelligence

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Abstracts:
This paper is to present elemental information on life success in the context of the functioning and development of artificial intelligence. It clarifies the following key words required in order to fully understand the issue: *success, life success* (or *success in life*), and *artificial intelligence*. Furthermore, the author of the paper discusses the salient knowledge areas and the most common applications of artificial intelligence in everyday life that are investigated in today's studies on the subject, and provides information on the risks associated with the development of this phenomenon.

Key words:
artificial intelligence, life success, success in life, success, education, new technologies

The topic of life success is a vital research interest of not only numerous scholars in the field of humanities and social sciences but also experts on economics, marketing, sports, music, medicine, politics, etc. This is due to the fact that achieving success is one of the fundamental human needs. Satisfying our need to be effective and successful and to accomplish goals is very important, because it allows for continuous personal development. Utilising one's own potential to acquire knowledge, experience, skills, and social competences promotes self-actualisation.

One usually places their life plans in the domains that are most crucial to them. Hence, success in life is highly subjective and is usually related to the area that is most valuable to a person. Learners of all stages usually associate life success with education, e.g. with obtaining good grades, certificates, and diplomas that confirm their achievement of subsequent levels of schooling. Working people, on the other hand, place life success in the realm of their professional activity, and associate it with career advancement, climbing up the corporate ladder, performing satisfying tasks, or earning significant income. Being successful in life is an important aspect of mental health and proper development of an individual.

The significance of success, including life success, to an individual

Defining the terms *success* and *life success* is necessary in order to further scrutinise the issue in question. Both appear quite often in the social sphere. They are present in publication means, everyday speech, and the literature on the subject. Their definitions can be found in numerous dictionaries.

For the purposes of this paper, it has been assumed that success is "a fulfilled intention or a successful outcome of an undertaking" (Grzenia, 2009, p. 526).

On the other hand, life success, as being directly related to the concept of success in general, shall mean "a relatively constant, individually defined positive result of actions taken by a person to achieve a tangible or intangible goal directly related to something that subjectively constitutes the person's most important life achievement so far or is anticipated as the ultimate goal to be achieved in life" (Łączek, 2019, p. 30).

All accomplishments of an individual are usually the sum of various activities and tasks performed. Goal achievement is typically a premeditated process. Each success usually requires some thinking in advance. Usually, the harder the task, the more time one spends preparing for it. (Although this is not an absolute rule.) First, one specifies the task and reflects upon the methods of implementation. Then, based on the goal, they analyse their own resources such as knowledge, skills, social competences, time and effort required, potential external support, financial expenditure, etc. Using their own capabilities of achieving the goal, they determine whether all

these factors are sufficient. If they are, one mentally devises viable courses of action, for which they construct detailed solutions related to the potential profits and losses. Having chosen the most optimal path, they set out for achieving their goal. While constantly monitoring the gradually obtained results, they modify the methods accordingly in order for them to be the most effective.

The above-presented brief mechanism is usually enough to reach the objective, or at least to draw nearer to achieving it—and if it is impossible to fully realise the plan— to reduce the sense of failure (i.e. failure to achieve the intended goal). Success is not always attainable. As early as at the stage of planning their course of action, many people allow for the possibility that achieving the desired outcome and, ultimately, success might not happen. This type of behaviour might stem from a rational, systematic analysis of the situation, or from the fear of failure (with the latter often being irrational).

Paweł Fortuna distinguished several types of such fear, referring to the top five as "the black five of failure." They include:

- fear of one's own shame and embarrassment;
- fear of lower self-esteem;
- fear of failure-induced precarious future;
- fear of having significant people losing interest in you;
- fear of arousing the interest of significant people (Fortuna, 2017, p. 76).

Curbing the fear of failure successfully boosts one's ability to achieve their goal. Self-belief is an important factor contributing to life success.

Artificial intelligence (AI) and its contemporary significance

Artificial intelligence (AI – an abbreviation for artificial intelligence, used in many countries) is a field of social and economic life that has become increasingly important in recent years. The popularity of artificial intelligence derives from a multitude of factors, including its versatility. It helps people in achieving their individual goals, but is also applied by companies and international corporations in their global measures aimed at reducing manufacturing costs while increasing the quality and diversity of their offer. The wide appeal of artificial intelligence and people's deep interest in AI-based solutions are evidenced by the number of results available in a popular Internet search engine.

Table 1. The number of results shown in the Google search engine for selected entries related to "artificial intelligence".

Password entered in Czech	Number of indications (31.12.2023 r.)	Password entered in English	Number of indications (31.12.2023 r.)	Password entered in Polish	Number of indications (31.12.2023 r.)
Umělá inteligence	11 600 000	Artificial intelligence	1 310 000 000	Sztuczna inteligencja	13 000 000
Umělá inteligence v řízení města	2 850 000	Artificial intelligence in city management	253 000 000	Sztuczna inteligencja w zarządzaniu miastem	1 240 000
Umělá inteligence ve vzdělávání	434 000	Artificial intelligence in education	1 080 000 000	Sztuczna inteligencja w edukacji	1 960 000
Umělá inteligence v elektronickém obchodování	21 600	Artificial intelligence in ecommerce	21 600 000	Sztuczna inteligencja w e-commerce	763 000
Umělá inteligence ve farmaceutickém průmyslu	68 400	Artificial intelligence in pharmaceutica industry	31 300 000	Sztuczna inteligencja w przemyśle farmaceutycznym	120 000

Umělá inteligence v medicíně	269 000	Artificial intelligence in medicine	395 000 000	Sztuczna inteligencja w medycynie	149 000
Umělá inteligence v logistice	21 500	Artificial intelligence in logistics	86 500 000	Sztuczna inteligencja w logistyce	27 800

Source: Own processing

Depending on the prevailing topic of a given publication, different definitions of artificial intelligence can be adopted. It is commonly understood as the ability of a device (a machine, a robot, or an android; 'An android—a humanoid robot built to aesthetically resemble a human') to imitate human thinking and intelligence. A more comprehensive definition is provided in the regularly-updated online version of the PWN Dictionary of the Polish Language and states that it is "a branch of computer science that is devoted to studying the rules governing human mental behaviour and creating computer software or systems that simulate human intelligence" (Author team, 2023).

Artificial intelligence is the subject of research in many domains of science. According to Krzysztof Goczyła, studies on artificial intelligence encompass the following areas:

- machine learning, which is the most important sphere of interest and involves the use of neural networks (artificial neurons) to acquire and store knowledge about the best solutions to once-performed tasks (e.g. the autocorrect, which suggests the most suitable word once the first few letters have been typed);
- data mining, which is the process of discovering the information and patterns in a large set of knowledge (data set) that will facilitate the immediate application of a knowledge package in order to perform a task in the most optimal manner (e.g. a scholar participating in educational and psychological conferences will probably be also interested in sociology conferences);
- algorithmics, which consists in the design and analysis of algorithms based on the course and principles accompanying different phenomena and processes (e.g. on-line search engines deliver the most relevant results to a query in the appropriate order);
- knowledge management , consisting in collecting, storing, sorting, and sharing knowledge in various forms such as text, image, sound, video, etc.;
- mechatronics engineering, which involves streamlining the operation of mechanisms by adding electronic solutions like state-of-the-art computers;
- cognitive science, which involves the scientific examination of cognitive processes, e.g. reasoning, information processing, and decision-making;
- logic, which involves justifying statements and inferring conclusions from premises;
- statistics, which is the discipline that concerns the collection of data about a population in order to draw conclusions relating to a specific phenomenon; etc. (Goczyła, 2018, p. 13).

Undoubtedly, these are only some of the areas of exploration that promote the development of artificial intelligence. The list is constantly expanding, because humans are continually striving to discover and forge new relationships in the world. In these circumstances, artificial intelligence is indispensable for achieving these goals.

Useful applications of artificial intelligence

As previously mentioned, artificial intelligence is a vital factor in the progression of modern civilization. It expands one's potential in realising their own plans and aspirations, but also helps improve the lives of groups, communities, and even entire societies. This is because artificial intelligence has interdisciplinary resources that can be utilised in various areas of knowledge and human existence.

Examples of using artificial intelligence in daily life include:

- on-line shopping and on-line advertising (displaying personalised ads based on search and purchase history);

- searching for data on the Internet, which shows accurate search results based on all the previous queries of people around the world;
- virtual assistants, e.g. in smartphones, who answer questions and help solve problems;
- machine translation, which uses appropriate software to translate written or spoken words;
- smart buildings and infrastructure, where e.g. energy-saving devices use the history of temperature settings or the start time of building/street lighting in order to adjust temperature or turn on/off the lights at a given time;
- cars and car accessories, e.g. the VI-DAS safety technology, where automatic sensors analyse the driver's behaviour on the road and inform about dangerous situations related to e.g. falling asleep at the wheel;
- cybersecurity, where by drawing from a database of the types and frequency of cyberattacks, artificial intelligence helps identify and combat such attacks;
- fight against COVID-19, e.g. using thermal imaging cameras in large crowds (like airports or train stations) to monitor people's body temperature and curb the spread of the virus;
- combating disinformation and dangerous trends on the Internet, e.g. searching for fake news in social media, identifying websites with profanity or dangerous videos;
- improving health care systems, e.g. analysing health-related data of large groups of people and tracking their physical activity, diet, or reported ailments, which can ultimately expand the possibilities of preventive care and foster healthy societies;
- cases of diagnosing cardiac arrest during emergency calls, which enables implementing life-saving measures much faster;
- rail transport, where safety and efficiency of train driving could be improved by adjusting the speed and braking to the train weight and local topography;
- industrial manufacturing, e.g. increasing output efficiency, optimising sales paths, or predicting equipment and machine failures;
- food production methods and agriculture; e.g. reducing the use of chemical fertilisers, thereby producing healthier food, using weeding machines, etc.;
- issues related to public administration and public services, e.g. using the data available to forecast and warn about natural disasters and to mitigate the consequences thereof (European Parliament, 2023).

It is worth adding that artificial intelligence is also applied in the educational sphere (apart from the above-mentioned data search on the Internet). It involves facilitating the learning processes of students and providing teachers with methodological and administrative support.

The scope of artificial intelligence applications is constantly expanding and is highly likely to include even more in the near future.

Threats of using artificial intelligence

It is worth noting that the development of artificial intelligence entails certain risks. The greatest social concerns associated with the emergence of artificial intelligence are related to the risk of its capability of original thought and uncontrolled decision-making. Escaping from under human supervision could have detrimental and unpredictable consequences, particularly if the areas at risk involve data security (e.g. military and personal data), national defence, banking, logistics, healthcare, nuclear energy, etc. In fact, any domain controlled by independently operating artificial intelligence could be the beginning of the end of the world as we know it. Because artificial intelligence today has algorithms capable of controlling various spheres, even the small ones, there is a risk that it could use them to take over more important and more complex areas. This would trigger a domino effect, where one element, once toppled, sets off the movement of another one.

More specific threats include:

- disinformation, e.g. filter bubbles, when a user receives only a limited portion of information that is personalised and curated by algorithms;

- deterioration of health, e.g. negative solutions suggested by artificial intelligence could limit personal contact with a doctor and the frequency of manual medical examination in favour of remote solutions;
- deterioration of the general standard of living, caused by e.g. the excessive use of artificial intelligence for useless purposes, which could in turn reduce the competitiveness of goods and services and trigger economic stagnation;
- increased surveillance of citizens, e.g. tracking user activity on the Internet (shopping, interests, news, names of preferred companies, hours of activity, etc.);
- mass job losses due to artificial intelligence replacing humans;
- deterioration of interpersonal contacts, which could lead to lower self-esteem or lower self-confidence;
- a sudden increase in employers' financial investment in the digitisation of many professions and urgent employee training, etc. (Fehler, 2021, pp. 280-281; Warchoł, 2019, pp. 23-30).

All the threats listed above can also constitute factors that make it difficult to achieve success in life. If experienced by a specific person, they could be detrimental to their self-actualisation potential.

Conclusions

As one of the new technologies, artificial intelligence is applied in many areas of human life. Nowadays, it seems that achieving life success with the support of artificial intelligence is easier and cheaper. There is a general positive consensus about the idea of expanding the scope of artificial intelligence applications. Devotees of artificial intelligence like to point out, or sometimes even glorify, its benefits, claiming that it could advance our civilisation even further. Provided the advantages of artificial intelligence are widely accessible to entire communities, and not only to the wealthy or the countries or environments with above-average economies, there is a chance that they will not deepen any social divisions. They might even eliminate them. However, there are some concerns associated with the risks that may only become apparent once artificial intelligence is fully up and running on a daily basis. Once we overstep the acceptable limit of such dangers, there may be no going back to the safe status quo from several months or years earlier.

All predictions regarding the development of artificial intelligence are only theoretical deliberations, with the assumed safety levels being also theoretical. Despite the interest of military, economic, and technological tycoons in the phenomenon of artificial intelligence, the topic remains under-researched, and our knowledge of the safe use of artificial intelligence is not yet sufficient enough.

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The Occurrence of Depression Among High School Students

Roman Liška

Abstracts:
The paper presents the findings of an investigation that, through a standardized questionnaire, assessed the level of depression among high school students based on the overall score. The identified values were compared with average values for the given population. The Beck Depression Inventory (BDI) was employed for the survey, involving 359 students from a high school in Prague. The study revealed a significant occurrence of depressive symptoms among high school students, with some symptoms being of a suicidal nature and highly severe.

Key words:
Covid-19, depression, suicide, school, guilt, burden

Introduction and theoretical framework

It can be generally stated that the levels of depression and anxiety among high school students are increasing (Crockett et al., 2023; Li et al., 2022). The prevalence of depressive and anxious symptoms may vary in each country or region, influenced by the environment in which the student lives and the societal attitude toward these issues. Determining the exact number of students experiencing depression or anxiety is challenging as not all affected students seek professional help. While a lower level of anxiety has been identified as essential for better academic performance, there is a growing concern about negative trends such as increased seeking of professional help, higher student mortality (e.g., due to suicide), and a shortage of mental health professionals.

Various studies describe numerous factors influencing depression, anxiety, or stress. Recent studies, for example, explored the impact of the environment and the demanding nature of medical studies on the development of depression among medical students (Thapa, 2023). Tang et al. (2023) examined life satisfaction as a factor in depression. Koutsimani et al. (2019) and others investigated the relationship between factors such as work/study satisfaction, burnout syndrome, personal failures, and depression. Modern factors, such as online activities and behavior, also contribute to depressive symptoms, as noted by Jenarová et al. (2021). Cyberbullying and its association with depression are discussed by Moeller et al. (2019). Other factors include age, gender, and individual genetics (Gao et al., 2019). Lebel et al. (2020) found that high school students were more susceptible to depressive symptoms during the COVID-19 pandemic quarantine compared to elementary school students. Substance abuse is another factor, with long-term use leading to decreased effectiveness and potential exacerbation of depression or anxiety (Bandelow et al., 2017).

The COVID-19 pandemic, quarantine effects, and social isolation due to school closures have had a profound impact on students (Chen et al., 2020; Liu et al., 2021). Mental health issues associated with depression and anxiety increased by 25% in the first year of the pandemic. This increase was primarily attributed to loneliness, isolation, loss of contact with loved ones, and disruptions to daily routines. Daily routines, such as attending school, are powerful tools that support cognitive functions, overall health (both mental and physical), and social opportunities (Sheehan et al., 2023). The pandemic disrupted daily life, including changes in work, school, and social activities (Jayamaha, 2023), negatively affecting mental health, with many students experiencing depression and anxiety (Hawes et al., 2022). Vulnerable groups during quarantine included students living in cities, those with a single parent or none, and females, especially those aged 18 and 19.

Methodology

The research aimed to assess the level of depression among high school students using a standardized questionnaire and compare the identified values with average values for the population. A school characterized as a modern institution with highly motivated students, a quality teaching staff, consistently high interest from applicants, and a friendly atmosphere was chosen for respondent selection. The survey took place from June to December 2023, involving 114 boys and 245 girls from the first to fourth grades, aged 15-18.

To assess the prevalence of depression, the Beck Depression Inventory (BDI) was used. This diagnostic tool, developed by American psychologist Aaron T. Beck in the 1960s, evaluates the severity of depressive symptoms in individuals. The questionnaire comprises 21 statements or questions to which respondents provide answers based on their recent experiences and feelings. Each statement has four possible responses, corresponding to different levels of symptom severity. The objective is to obtain objective information about depressive symptoms and help medical professionals, psychologists, or therapists better understand the client's condition. The questionnaire covers statements related to various aspects of emotional state, such as sadness, loss of interest, or inability to derive joy from things. Respondents rate their agreement with each statement, and an overall score is calculated, indicating the severity of depressive symptoms. Scores up to 10 points define no depression, 10-20 points indicate mild depression, 20-40 points indicate moderate depression, and 40-60 points indicate severe depression.

Psychometric properties of the Beck Depression Inventory were reviewed by Wang and Gorenstein (2013), showing high internal consistency (0.9) and test-retest reliability ranging from 0.73 to 0.96. Criterion-based validity demonstrated good sensitivity and specificity for detecting depression compared to accepted standards. However, the screening cutoff scores varied depending on the sample type. Factor analysis revealed a robust dimension of general depression consisting of two constructs: cognitive-affective and somatic-vegetative.

Richter et al. (1998) highlighted the limitations of BDI, including high item difficulty, lack of representative norms, questionable objectivity of interpretation, controversial factorial validity, score instability in short time intervals (within 1 day), and poor discriminant validity against anxiety. On the positive side, the inventory boasts high internal consistency, high content validity, validity in distinguishing between depressive and non-depressive subjects, sensitivity to changes, and international recognition. The Beck Depression Inventory (BDI) stands among the most widely used self-report scales globally for measuring depression.

Results

In terms of the students' age, the first-year high school students at the age of 15 (score 17.23) exhibited the highest signs of depression, followed by fourth-year students at the age of 18 (16.67). Students in the third year were relatively the least affected by depression (13.99), followed by second-year students (15.15). When calculating the overall average of responses to individual questions, girls showed a higher level of depressiveness (18.72 points) compared to boys (9.91). Statistically, depressive symptoms appear less frequently in boys than in girls.

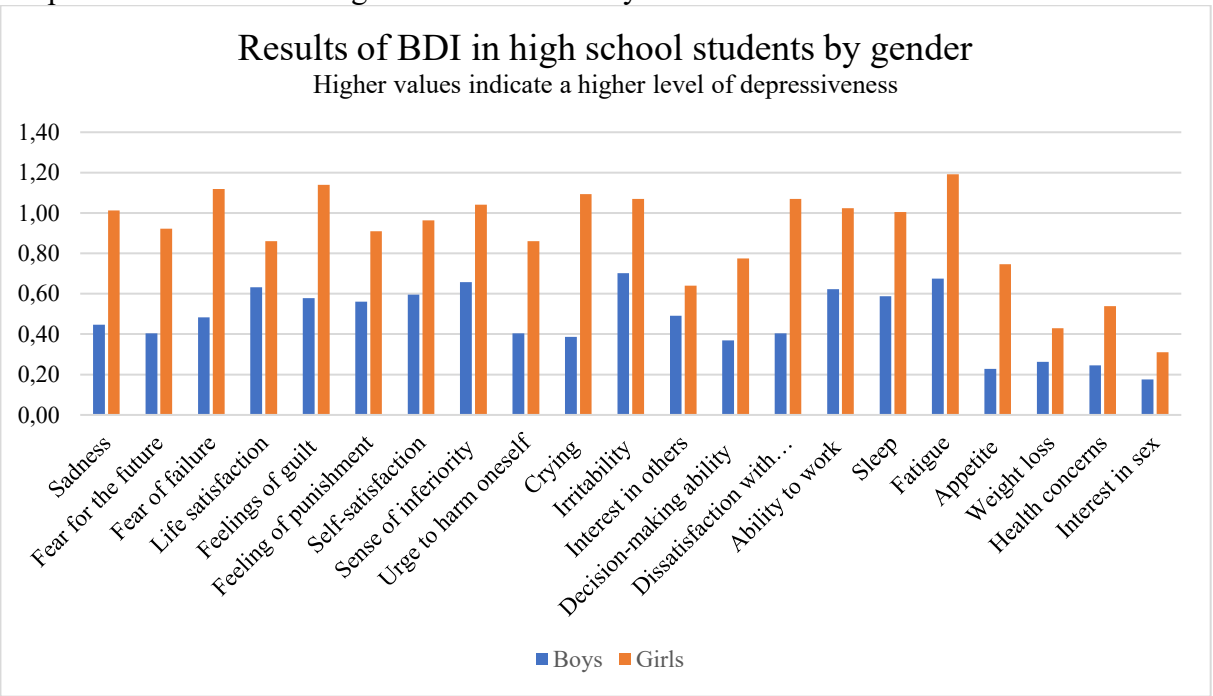
Looking at specific students, more than 10% of boys (12 students) show values indicative of moderate to severe depression, with only one of them receiving professional care from a psychologist or psychiatrist. For girls, the situation is even worse. More than 42% (104 female students) exhibit symptoms of moderate to severe depression, and 19 of them (18%) are in professional care.

Ten students, including one boy, exhibit symptoms of severe depression (score 40 and above). Six of these students are under the care of a psychologist or psychiatrist, while four students receive no professional care.

When examining individual depressive symptoms, girls most commonly report high fatigue (average score 0.91), feelings of guilt (1.14), fear of failure (1.12), and dissatisfaction with their appearance (1.07). On the other hand, in boys, emotional lability and easy irritability (0.7) are the

most common signs of depression, followed by fatigue (0.68), a sense of inferiority (0.66), and life dissatisfaction (0.66).

Graph 1: BDI Results in High School Students by Gender

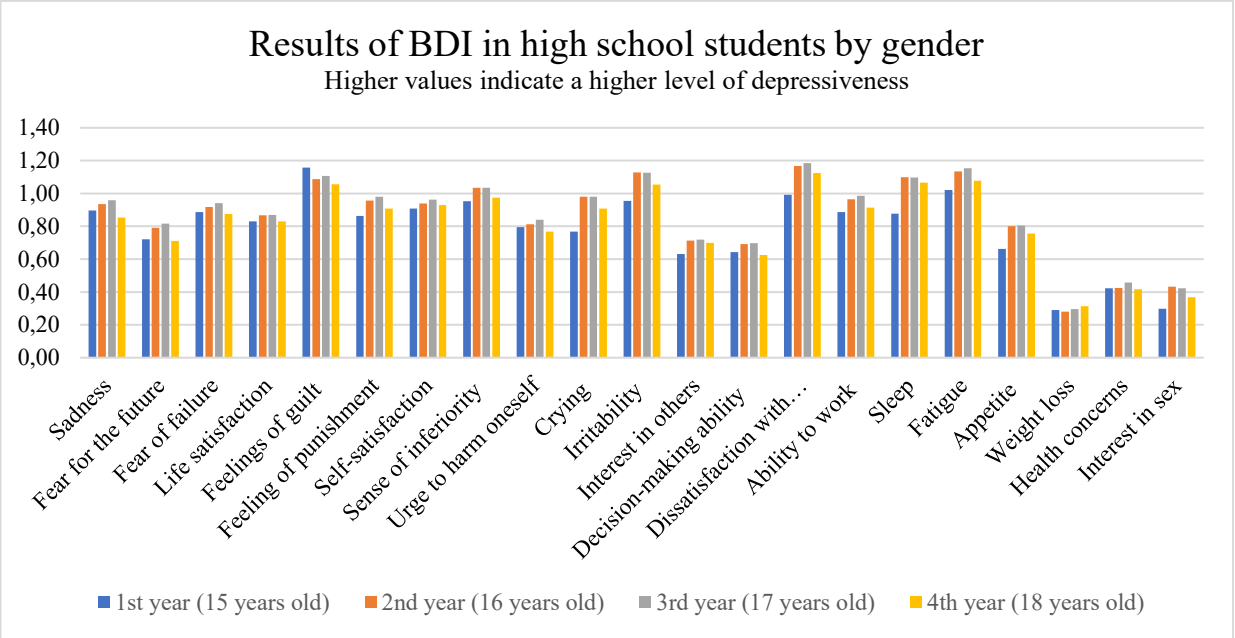


Source: own processing

When analyzing the obtained data by the respondents' age, questions related to the appearance of students had the most negative impact. Seventeen-year-old students were most affected (score 1.18), followed by sixteen-year-old students (1.17). Fifteen-year-old first-year students were most troubled by feelings of guilt (score 1.16). Second-year students reported emotional instability and fatigue the most (1.13).

The responses to specific questions are also alarming. For example, when asked about suicidal thoughts, 27 students (7.5%) answered that they would rather be dead, it would be better for their family without them, and they have a clear plan for suicide. Sixteen students (4.4%) responded that if they could, they would kill themselves. Regarding satisfaction with themselves, 21 students (5.8%) answered that they hate themselves.

Graph 2: BDI Results in High School Students by Age



Source: own processing

The conducted survey further reveals that 33 students (9.1%) are under the care of a psychologist or psychiatrist outside the school facility. Only six students (1.6%) among all surveyed students utilize the services of the school counseling center. Four students (1.1%) expressed an interest in seeking help for their mental health issues from the school during the survey. Conversely, seven students exhibiting moderate to severe depression (score above 20) declined the assistance offered by the school.

Discussion

The survey, in line with Ramón-Arbués et al. (2020), indicates that depressive factors are more prevalent in girls; however, individuals with a high level of depressive symptoms can also be found among boys. Given the nature of the survey, the obtained results cannot be extensively discussed. Nevertheless, it can be speculated that the increased level of depressiveness among first-year students is related to their adaptation to a new school environment, conditions, and demands, while for fourth-year students, the impending graduation or entrance exams for higher education may be a depressive factor. As stated by Kamarádová Končelíková (2020), the causes of depression are multifactorial, and environmental influence usually accounts for two-thirds of the factors.

The high percentage of students with suicidal thoughts or thoughts of 'wanting to punish themselves' is considered serious. Similarly severe is the low percentage of students, even with a high level of depressive symptoms, who seek help from the school or external institutions. Also noteworthy is the level of fatigue, which remains consistent over time and may indicate excessive academic demands or low adaptability of the surveyed students to the workload.

Conclusions

The period of adolescence is a critical phase in development, shaping personal identities and fundamental skills for future life. Most mental health issues manifest during early adulthood, yet young adults rarely receive adequate support. Depression and anxiety are among the most common mental disorders affecting young people in high school. They have a significant impact on individuals' lives, particularly during adolescence, and can have long-term consequences on academic success, social relationships, and overall quality of life. The conducted survey provides only a brief glimpse into the lives of high school students post the Covid pandemic, various crises,

and conflicts society is facing. Therefore, it calls for further follow-up studies to identify the contextual aspects of the results, their causes, and causal relationships. Although it sheds light on serious realities, it does not aim to generalize the findings. Nevertheless, it is evident that the current state of mental wellbeing of young people is alarming, necessitating prompt actions from schools, the government, and all stakeholders involved.

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Current Issues of Human Resource Management at the Ministry of Defence of the Czech Republic

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Abstracts:
The article deals with current issues of human resource management at the Ministry of Defence of the Czech Republic. It is focused on describing the current security situation and the possible consequences for the Czech Republic that occur in connection with the war in Ukraine. The article deals with demographic changes that affect the possible sources of recruitment of candidates for professional military service in connection with changes in legal regulations concerning this area.

Key words:
Human Resource Management, Armed Forces, Demographic Development, Recruitment, Education, Czech Republic

Introduction

Human resource management is an integral part of the management of any employer entity that wants to succeed in the labour market. It includes areas such as job creation and analysis, personnel planning, personal marketing, recruitment, selection, hiring, orientation and adaptation of employees, evaluation, remuneration, education, employee development, career, personnel information systems, motivation and stimulation of employees, analysis of the external and internal labour market, work performance management, corporate social policy, work organization, social responsibility, personnel audit and controlling.

As a result of external conditions, primarily legislative and economic, changes occur, to which employers must respond. In addition, one of the essential external influences for the Armed Forces is the security factor, which is the driving force for changes that are reflected in the legislative, economic and personnel aspects. The current security situation primarily affects changes in the area of military personnel recruitment, which is one of the strategic priorities of defence. It is necessary to take into account the demographic development of the population, economic aspects, the position of the Ministry of Defence as an employer, but also the interest of citizens to join the professional military service. The Czech Republic also creates other opportunities for citizens to participate in ensuring defence and sovereignty.

1. The current state of the investigated issues

In the professional environment, in connection with the replenishment of the Armed Forces, continuous changes such as demographic development, motivation to join the Armed Forces, the requirements of the emerging Generation Z, the focus on sustainable human resources and education are also being identified.

Professional publications describe spatial differences in the behaviour of the Czech population based on its sociodemographic structure and its development. The level of education was chosen as an indicator of social and economic status (Vrtiška & Maier, 2022). Křesťanová a Kurkin (2020) analysed the demographic situation in the Czech Republic in 2019 and placed it in the context of demographic trends in the last decade. The study describes the development of individual components of demographic development and their effects on population size, age and marriage structure of the population. The population of the Czech Republic grew as a result of the positive balance of foreign migration. Natural change was slightly negative in 2018, total fertility and divorce rates stagnated. Marriage rate has increased along with life expectancy at birth in men and women. The overall abortion rate has decreased slightly (Křesťanová & Kurkin, 2020). No less important is the relationship between the productive population and the Czech economy by

2060. Research shows that the Czech Republic will be strongly confronted with an aging population and an appropriate combination of different policies will be needed. The fundamental question is to what extent the development of labour productivity and technical progress can prevent a radical increase in the retirement age. Capping this basic economic parameter at the age of 65 will shift the economic burden to the productive population, which will have to respond (Sixta & Safr, 2022). Dufek and Minařík (2009) also dealt with the issues of population aging in the period from 1998 to 2007.

Motives are explored in connection with joining the Armed Forces. Motivation for joining the military has been systematically studied by experts since the 1970s. Researchers interested in studying why individuals engage in military service have often categorized the diverse set of motivators for enlistment via the analytical framework of Moskos´ (1977) Institutional-Occupational Army Model (I-O model). Moskos has defined two different concepts of organizing the military – the Institutional and the Occupational Armed Forces. The institutional military is legitimated in terms of values and norms that create a personal sense of obligation. Its members usually follow a calling, and the purpose of the Armed Forces transcends individual self-interest. Talking about world armies, the institutional perspective reflects the intrinsic values, such as duty to country, desire to serve others, loyalty and commitment, discipline, honour, and patriotism (Eighmey, 2006; Griffith, 2008; Lawrence & Legree, 1996; Moskos, 1977; Woodruff et al., 2006). Karlova (2018) presents the results of a sociological study of issues of military-professional motivation and value orientations of air force cadets. The results of the analysis revealed that the cadets were mainly divided into three types: Idealists, Pragmatists and Skeptics. The author concludes that the idealistic type of cadets has the greatest potential as the most patriotic and loyal one (Karlova, 2018). The authors Krebs and Ralston published the results of a nationally representative survey in the United States, finding that despite of the reality of market-oriented recruitment, many Americans still believe in the idealized image of soldiers as people driven by self-sacrificing patriotism (Krebs & Ralston, 2022).

An important aspect is also shown by changes in the behaviour of Generation Z, which enters the labour market. The survey included 649 respondents, young Poles, entering the labour market. It was also an interesting research task for the authors to compare the results of surveys among young Poles with the results of international surveys. The research provided insight into the expectations, values and preferences of young people in the field of work. The results of the survey can provide valuable guidance to employers in shaping sustainable human resource management strategies. In addition, studying the competencies of Generation Z can identify the gap between the demands of the labour market and the skills that young workers possess (Bińczycki et al., 2023).

A number of experts deal with the education of cadets in foreign publications. Yu (2015) investigated the analysis of value types and factors that influence military cadets (Yu, 2015). Terziev and Nichev (2017) analysed the environment for the functioning of the military education system and examined its influence on the preparation of cadets for military professional activity in the Republic of Bulgaria (Terziev & Nichev, 2017). Hurbišová and Davidová (2016) focused on identifying the status, opinions and attitudes towards the issues of commanders´ education within the Lithuanian and Austrian Armed Forces (Hurbišová & Davidová, 2016). Information technology has also become an important area in cadet education (Wang et al, 2019). In the same way, new mobile technologies in teaching English to military students became the subject of research (Maier & Yukhymenko, 2022). In the Czech professional environment, Kubínyi and Veteška dealt with the education of military students. They focused attention on the importance of further education of soldiers in the context of career development and management (Kubínyi et al. 2022; Kubínyi & Veteška, 2017). The first of the above-mentioned authors further investigated learning competencies and the possibilities of their development in military professionals (Kubínyi & Saliger, 2021). Based on theoretical approaches, they identified the

possibilities of using the most up-to-date approaches to increase the degree of effectiveness of educational and training processes in military professionals of the Army of the Czech Republic.

Changes in the security situation

"The strategy of promoting security interests lies on the one hand in preventing, suppressing and mitigating the effects of security threats and on the other hand in strengthening systemic, economic, social and environmental resilience, i.e. the ability to resist adverse influences, manage adverse situations and overcome crises" (Security Strategy, 2023, p. 18). "The defence system of the Czech Republic has the ability to deploy the Armed Forces for war and the necessary mobilization of human and material resources. The Czech Republic is building all the elements necessary for this" (Security Strategy, 2023, p. 27). "The defence of the Czech Republic cannot be ensured only by professional soldiers. Prepared and available reserves of the Armed Forces must participate more in defence. "The Czech Republic is, therefore, building the capability of wartime development of its Armed Forces, including the preparation of reserves, the mobilization system, the necessary infrastructure and the acquisition of material stocks" (Defence Strategy, p. 3). "Reliable defence also requires sufficiently numerous, motivated, competent and well-prepared personnel operating in all areas key for defence" (Defence Strategy, 2023, p. 3).

To ensure its security, the Czech Republic is creating the Armed Forces, and the Army is the basis of the Armed Forces. The basic task of the Armed Forces is to prepare for the defence of the Czech Republic and defend it against external attack. The Armed Forces also perform tasks that result from the international contractual obligations of the Czech Republic on common defence (Act No. 219/1999 Coll.). “The prerequisite for the fulfilment of these tasks is the combined-arms character of the Army of the Czech Republic and the combination of robust forces equipped with heavy military equipment and technologically advanced means, including the effective use of emerging and breakthrough technologies" (Security Strategy, 2023, p. 25). The environment in the Army is a specific social system, which is "a strictly centrally controlled institution with a hierarchical organizational structure, a specific social environment with its own social stratification, an organization with the dominance of formal relationships between people over informal, personal relationships, and is also a fighting group."(Piffel & Velehradský, 1993, p. 57-58).

Acquiring new candidates through signing a professional military service contract is regulated by Act No. 221/1999 Coll., on Professional Soldiers. The profession of a soldier is determined by the nature of the activities, for which he is being prepared, and this nature of the activity is associated with the risk of loss of life or injury, which the soldier voluntarily accepts. A soldier's activity is also typical in that it is performed within teams, crews, units and formations. According to Němeček et al., the content and system of training military professionals are always a reflection of the state's security policy, which responds to the development of the international security environment (Němeček et al., 2017). In this context, the main goal of training military personnel is "a professional who is characterized as a qualified expert in a voluntary professional military service, educated in the military and specially prepared for military practice" (Concept, 2011, p. 17). "All levels of the civilian and military education system will also be appropriately involved in preparing for defence with the aim of promoting critical thinking, developing the civic awareness of pupils and students, strengthening their sense of civic responsibility and motivating them to actively participate in public life. The education system appropriately promotes military, security and technical knowledge and skills and strengthens the willingness to contribute to the country's defence" (Defence Strategy, 2023, p. 11).

One of the components of further education is professional education, the aim of which is the development of knowledge, abilities and attitudes required for the exercise of a profession. A partial system of continuing professional education for adults in the Czech Republic is the system of training personnel for the needs of the Ministry of Defence. The importance of personnel training is also emphasized by the fact that personnel development is regulated by Act No.

221/1999 Coll., on Professional Soldiers. The training of the personnel of the Ministry of Defence is oriented towards the comprehensive solution of security issues in the field of military and non-military threats; the preparation of soldiers for the performance of tasks in combat operations is considered the basis. The main goal of the training is the preparation of a military professional as an expert, educated in the military and prepared for practice, who realizes that he fulfils a socially significant role in ensuring the defence of the state. The secondary goal of personnel training is the preparation of a civilian employee as a qualified expert educated in his field and the goal of his training is deepening expertise to perform work (Concept, 2011, p. 17). A significant aspect, especially in the current period of acquiring the most advanced equipment and technology, is the preparation of personnel for their introduction and effective use. The activity of military professionals in ensuring security usually takes place collectively, and this gives another aspect of preparation, which is aimed at coordinating the activities of individuals in social systems.

Changes in legal regulations in relation to reserves - voluntary predetermination

Extensive revision of legal regulations in the field of defence responds to a number of identified complications. It also does not hide the fact that the changes in the laws are a response to the conflict in Ukraine. “On the basis of the initial analysis of the course of the conflict and following the increased need to raise the state's level of preparedness for defence already at a time when the state is not in a state of danger or a state of war, a proposal is submitted to amend the legal regulations; this will allow the government to implement new measures and citizens to make more use of the right to actively participate in the preparation for the defence of the state." (Explanatory Report to Act No. 178/2023 Coll.).

One of the new options for increasing preparedness for a war crisis is the so-called voluntary predetermination, also known as "Predetermination for the Replenishment of the Armed Forces" (Section 5b of Act No. 585/2004 Coll. This institute falls into the category of Active Reserves of the Armed Forces and Voluntary Military Exercise as a voluntary choice to join the defence of the Czech Republic. The potential of voluntary predetermination is to improve the overview of citizens of the Czech Republic who are able to perform extraordinary service (Section 1 Subsection 8 of Act No. 585/2004 Coll.). The process of voluntary predetermination includes the expression of citizens' interest at the relevant regional military headquarters, the subsequent verification of prerequisites, including a medical examination at one of the military hospitals in the CR, and the conclusion of the entire process with a decision on the ability to perform military service for a maximum period of five years with the possibility of subsequent extension. During this time, based on an extraordinary government decision, an individual may be sent to a military exercise for a total duration of up to 12 weeks (Section 12 Subsection 6 of Act No. 585/2004 Coll.). A citizen, by his decision to be voluntarily predetermined for the replenishment of the Armed Forces, thus makes it clear that he has a serious interest in the defence of the homeland. He is ready, in the event of a deterioration of the security situation, based on the decision of the government, to carry out mandatory military exercise, during which he will acquire basic military knowledge and skills. On the basis of the Military Service Act, a citizen of the Czech Republic who has reached the age of 18 but has not yet reached the age of 60 can undertake military service in peacetime, if he requests predetermination to supplement the Armed Forces on the basis of a written application submitted to the relevant Regional Military Headquarters.

The prerequisite for voluntary predetermination for replenishment of the Armed Forces is the need for the Armed Forces and the fulfilment of the conditions, which according to the Explanatory Report are:

- Medical fitness (verified by a doctor of the military health service provider);
- Criminal integrity (verified by an extract from the Register of Criminal Records);
- Declaration of non-support, non-advocacy or non-sympathy with a movement that is demonstrably aimed at suppressing human rights and freedoms, or proclaims national, religious or racial resentment or resentment against another group of people (verified by an affidavit).

Another legal obligation of a citizen voluntarily predetermined to join the Armed Forces is the obligation to notify the relevant Regional Military Headquarters of changes in personal data (e.g. address of place of residence, marital status, significant changes in health status, etc.) within 8 days from the day the change occurred. A reservist who was called up for a military exercise on the basis of an extraordinary measure by the government, if he completed military training to acquire basic military knowledge and skills and was not assessed as unsatisfactory after its completion, is entitled to a reward in the amount of CZK 15,000 (Explanatory Report to Act No. 178/2023 Coll.).

A novelty in the process of recruiting military professionals is the launch of the Virtual Recruitment Centre (doarmady.cz) from September 2023. With this project, the Ministry of Defence targets Generation Z, which is just entering the labour market. The virtual Recruitment Centre clearly provides information for interested parties who are thinking of serving in the Armed Forces, primarily as professional soldiers, reservists, or students at a military school. In addition to basic information and the military phone numbers, there is also an overview of the types of positions offered, the amount of the recruitment allowance, the average starting salary, the number of days of paid vacation, the service allowance, standards for physical training and games (Cyber Force, Specter, 3D Simulation game). Following the current security changes, the numbers of dates for completing Basic Training for newly recruited soldiers have also been extended.

2. Data and Methods

The Czech Republic is a solid part of democratic European structures and belongs to the category of developed economies. Simultaneously with the change of the political system and the onset of the democratic process, there was a change in the structure of society, which is reflected in a significant change in socio-economic indicators. Society is aging, the birth rate and the numerical representation of the working-age population are decreasing, while the number of people aged 65+ is increasing. Changes in the structure of the population are manifested by a quantitative decrease in the available resources of suitable people, which significantly complicates the process of recruiting people for professional military service. The decrease in the number of males and females in selected years is shown in Table 1.

Table 1: Age composition of the population in selected years 2010 to 2065 by age, both sexes, medium variant

Age/Year	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Total	**976435**	**865276**	**686277**	**697391**	**816616**	**839837**	**794774**	**743656**	**689552**	**678695**	**721852**	**755841**
19	132246	97994	92458	106020	119490	113482	106669	98410	92318	96634	103994	105328
20	132259	109624	91904	101870	122050	115593	108920	100896	93566	96095	103817	106441
21	138604	124294	93911	98909	124600	117780	111207	103565	95409	95920	103540	107493
22	138818	125814	95144	98851	120365	119962	113508	106285	97769	96133	103178	108400
23	142114	134197	96129	98096	112884	122093	115831	108962	100548	96763	102780	109089
24	145666	136594	102485	97013	110594	124093	118167	111541	103614	97826	102409	109496
25	146728	136759	114246	96632	106633	126834	120472	113997	106328	99324	102134	109594

Source: processing and editing by the authors using the data from the Czech Statistical Office: Projection of the population of the Czech Republic until 2065, (online), [2023-11-14], Tab. 8. Available from: https://www.czso.cz/csu/czso/projekce-obyvatelstva-ceske-republiky-do-roku-2065-n-58t98jgowg

Decreasing numbers of men and women aged 19 to 25, set criteria of required health and physical condition of applicants, length and complexity of the admission process on the one hand, the specific demands and changing attitude of the young generation towards the overall way of life, the pursuit of maximum balance between personal and working life and issues of material security on the other hand, are currently causing the Ministry of Defence to fail to meet the set recruitment goals. According to the Czech Armed Forces Development Concept 2030, the Army of the Czech Republic is to have 30,000 professional soldiers this year. The expected natural departure rate of soldiers from the service will range from 1,400 to 1,500 people per year; in order

to ensure the turnover of personnel and to achieve the desired target state of the number of professional soldiers, it is necessary to recruit 2,400 people every year (the net year-on-year increase will be in the range of 800 to 900 professional soldiers). It is expected that 1,700 people will be recruited through direct recruitment, and about 700 people through studies at the University of Defence (the Czech Armed Forces Development Concept 2030, 2019, p. 37). In 2023, there will be a drop in direct recruitment compared to the set recruitment target in the amount of at least 400 people. The development of the number of personnel (see Table 2) shows an increasing number of people in all categories.

Table 2: Development of the number of personnel at the Ministry of Defence of the Czech Republic from 2010 to 2022

Year	Gen	SO	JO	WO	NCO	Men	PC	Unass	Career Soldiers	Civilian Employees	State Employees	MoD Total	Active reserve
2010	22	2 258	3 255	6 082	7 637	1 118	937	952	22 261	8 303		30 564	1 098
2011	22	2 140	3 319	6 049	7 399	1 160	965	697	21 751	8 248		29 999	1 093
2012	18	2 091	3 376	6 052	7 375	1 078	1 067	676	21 733	8 288		30 021	1 128
2013	20	1 981	3 315	5 875	6 894	787	955	1 184	21 011	7 530		28 541	1 214
2014	21	1 942	3 377	5 944	6 963	709	1 266	642	20 864	7 487		28 351	1 237
2015	19	2 027	3 418	6 224	7 474	828	1 464	516	21 970	6 411	1 131	29 512	1 259
2016	25	2 094	3 596	6 654	7 829	1 021	1 485	480	23 184	6 515	1 148	30 847	1 488
2017	28	2 079	3 739	6 923	8 364	1 214	1 422	482	24 251	6 691	1 178	32 120	2 270
2018	27	2 111	3 877	7 151	8 800	1 348	1 346	445	25 105	6 796	1 183	33 084	2 853
2019	29	2 211	3 889	7 646	8 764	1 164	1 592	604	25 899	6 896	1 163	33 958	3 236
2020	31	2 285	4 103	8 161	9 075	1 234	1 258	474	26 621	7 017	1 133	34 771	3 440
2021	31	2 315	4 223	8 302	9 110	998	1 431	518	26 928	7 090	1 109	35 127	3 615
2022	32	2 343	4 240	8 419	9 153	962	1 471	577	27 197	7 096	1 096	35 389	4 191

Source: https://www.army.cz/en/facts-file/personnel-size/personnel-size-of-the-defence-department-in-1992---2019-221441/. Gen - Generals, SO – Senior Officers, JO – Junior Officers, WO – Warrant Officers, NCO – Non-commissioned Officers, Men - Men, PC – Preparatory Choir, Unass – Unassigned.

3. Results and Discussion

Declining birth rate and population, deteriorating health conditions (in relation to the conditions for joining the Armed Forces), reduced interest of Generation Z, and decreasing numbers of volunteers entering the Armed Forces are the current trends of developed countries. The economic situation of the state (which is reflected in the economic situation of its inhabitants) and interest in serving in the Armed Forces can be considered the most determining factors. Previous publications have not shown the dependence of unemployment on people's interest in joining the Armed Forces (Holcner et al., 2021). From a macroeconomic viewpoint, it appears to be a positive fact that the current unemployment rate in the Czech Republic is one of the lowest in the European Union. The question remains whether people would be more interested in joining the Armed Forces if the unemployment rate were, for example, above 10 %. On the other hand, the study by Holcner et al. (2021) confirms that people's interest in joining the Armed Forces increases as the defence budget increases. If we assume a natural rate of departure of professional soldiers in the number of 1,400 to 1,500 people per year and the number of new recruits in the number of 2,400 people per year, then the development of the "Professional soldier" category is modelled, see Table 3.

Table 3: Modelling the number of professional soldiers

Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Personnel: Professional soldiers	27197	28097	28997	29897	30797	31697	32597	33497	34397	35297	36197	37097	37997	38897

Source: https://mocr.army.cz/scripts/detail.php?id=129653, edited by the authors.

Priority is provided for expenses of a mandatory nature in relation to people with an assumption of a numerical increase in personnel; expenses for the implementation of strategic projects; expenses related to the fulfilment of obligations towards NATO; obligations arising from the membership of the Czech Republic in international organizations; and expenses associated with the deployment of forces and resources of the Army of the Czech Republic in foreign operations. According to the program statement of the government from March 2023, defence spending in the years of the medium-term outlook will increase in accordance with alliance commitments to reach the level of 2% of GDP. The Ministry of Defence Budget Chapter is structured in the following proportions: 50 % mandatory expenditure, 30 % operational expenditure and 20 % investment in the replacement of equipment (materiel) (White Paper, 2011, p. 59). An important attribute of the possible change in the above-mentioned ratios is at the decision of the Government of the Czech Republic. For 2023, the ratio is set as follows: 37.20 % mandatory expenses, 35.2 % investments, 27.6 % current expenses.

Table 4: Development of the approved parameters of the Ministry of Defence State Budget Chapter (expenses)

Year	2022	2023	2024	2025
Departmental budget - expenses (billion)	89	111	130	155

Source: https://mocr.army.cz/finance-a-zakazky/resortni-rozpocet/resortni-rozpocet-5146/

The security environment, obligations of international structures, macroeconomic variables (unemployment, GDP), the amount of the departmental budget, the needs and possibilities of the Ministry of Defence are the primary factors, on which the target recruitment numbers are based. The interest of the population, the state of health, the educational structure are other important factors for securing military personnel for the Armed Forces of the Czech Republic. "The long-term trends of demographic development in the Czech Republic indicate that the human potential in the period up to 2028 will not differ significantly from the present and will be sufficient from a quantitative point of view to replace the personnel of the Ministry of Defence. A risk factor from a qualitative viewpoint is the reduction of the physical competence of the young generation and the deterioration of their health, as well as the changing social environment of society, which will affect the ability of the Ministry of Defence to maintain and further develop competent and motivated personnel." (Long-term Perspective of the Ministry of Defence, 2008).

Conclusion

The analysis of demographic development shows a downward trend in the number of the population of the Czech Republic. Deteriorating state of health, physical fitness, reduced interest of Generation Z and declining numbers of volunteers joining the Armed Forces are enough impetus for defence to analyse and investigate the influencing factors. Despite of these pitfalls, it can be concluded that in 2030 the Ministry of Defence should meet the target state, i.e. 30 thousand people in the professional military service, assuming a natural rate of departure of professional soldiers in the number of 1,400 to 1,500 people per year and number of 2,400 newly recruited people per year. The planned departmental budget reflects this fact. The structure of the departmental budget proves that the largest expenditure part is the part of mandatory expenditures. Only competent personnel, properly motivated, with the appropriate personality characteristics can ensure the fulfilment of all goals and priorities of the Ministry of Defence.

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Does gameful design work for adults in digital learning environments?

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Abstracts:
Work is something you must do, whereas gaming is something you must not do. In this paper, we tried to combine Lippitt et al. (1984)'s adult learning principles and Sümer and Aydın (2022)'s gameful design principles to try to understand if gameful design works for adult learners in digital learning environments to foster learners' motivation and engagement. Based on those two design principles, gameful design in adult learning was discussed at the end.

Key words:

Adult learning, gamification, gameful design, design principles, motivation.

Introduction

The literature on adult learning supports the idea that teaching adults should be different than teaching children and adolescents (Collins, 2004). Adults, unlike children and adolescents, have many responsibilities to balance the learning. Adults face barriers to participation in learning activities as a result of these responsibilities. Some of these barriers include a lack of time, money, self-confidence, or interest, as well as a lack of information about learning opportunities, and scheduling issues for their workload (Sümer, 2021). As a result of these barriers, adults either do not attend the learning activities or drop of the learning during the time.

Knowles (1979) mentioned adult features and Lippitt et al. (1984) created and listed a number of "principles" associated with adult learning. Based on those principles;

- Adult learner is self-directed, but they have been trained to rely on teachers for learning, so they must be re-oriented.
- Adults are the most diverse sources of experience for one another. However, because they can become stuck in routine ways of thinking, they may require assistance in becoming more open minded. An adult's identity is formed by her experiences and actions. Devaluing this experience thus devalues the adult as a person.
- Readiness to learn is determined by the desire to know or do something in order to perform a critical developmental life task more effectively.
- Because the learning orientation is problem-centered, learning experiences must be organized around critical life experiences.
- Internal motivators such as recognition, self-esteem, self-confidence, and self-actualization are the most powerful sources for adults.

If the learning experiences were not designed based on those principles, learning loss occurs. Learning loss in adult learners is frequently compensated for by additional incentives, better material selection, and other factors. One factor to recover the learning loss might be the gameful design of digital learning environments for adult learners (Sümer & Aydın, 2018).

Gamification

Gamification is defined as the incorporation of game elements, mechanics, and frameworks into nongame situations and scenarios, or the use of game design elements in nongame contexts (Horizon Report, 2013). According to Kuo and Chuang (2016), gamification is an emerging trend that involves using game mechanisms or elements in nongame contexts to increase an audience's or user's motivation and engagement. The feature of fostering learners' motivation and engagement is highlighted in gamification. It differs from game-based learning in the use of game

design elements in nongame contexts, which requires significant effort to integrate more playful components with the nongame target.

Game elements were classified in various ways. However, dynamics, mechanics, and elements are the most common classifications based on the level of abstraction from the specific design element (Coccoli et al., 2015).

- Dynamic: the highest level of abstraction. Among them are constraints, emotions, narrative, progression, and relationships.
- Mechanics: techniques for driving interactions and increasing engagement. Some of them are challenges, chances, competition, collaboration, feedback, resource acquisition, awards, purchases, turns, and win states.
- Elements are mechanics and dynamics instantiations. Some of the ways they may appear are achievements, avatars, badges, boss fights, collections (of items, badges), fighting, content unlocking, gifting, leaderboards, level, points, quest (predefined tasks with goals and rewards), social graph, community, and virtual products (game assets with perceived or real-money value).

The first studies in the literature focused primarily on the design and evaluation of gamified systems, with researchers attempting to demonstrate that gamified systems outperform non-gamified systems. More recently, progress has been made in understanding the mechanisms by which gamification design can achieve those outcomes. Nacke and Deterding (2017), for example, noted that researchers nowadays ask "how and when" and "how and when not?" rather than "what" and "why." Despite these advances, gamification research continues to face a number of empirical and theoretical challenges. To begin with, research on gamified systems has remained narrowly focused on evaluating and perceiving individuals' short-term interactions with the system (Rapp et al., 2019).

Gameful Design for Adult Learners

In this paper, we tried to combine Lippitt et al. (1984)'s adult learning principles and Sümer and Aydın (2022)'s gameful design principles to try to understand if gameful design works for adult learners in digital learning environments. According to Lippitt et al. (1984), adult learners must be re-oriented to not rely solely on teachers; learning experiences must be organized around critical life experiences; adults are the most diverse sources of experience for one another; and internal motivators such as recognition, self-esteem, self-confidence, and self-actualization should be incorporated into the learning design.

Besides those adult learning principles, Sümer and Aydın (2022) adds that gameful design is found to be fun by learners and to help learners stay motivated. Gameful design, according to this study, has a positive effect on learners' digital learning behaviors including visiting digital learning environment more and completing learning tasks and should be used more in open and distance learning programs. They added some gameful learning design principles;

- *Instructions/Guidelines* should be clear how to collect points in the system, how to earn badges, and what it means earning a badge. When learners struggle with instructions, the situation should be clarified.
- *Competition*; it has been discovered that gamification motivates learners by creating a competitive environment through the use of learning points and leaderboard elements, but this should not be turned into a race that disrupts the learners. Ibanez et al. (2014), on the other hand, discovered in their research that when competition ended, learners' participation in the system decreased.
- *Badges* are important in informing learners about what they completed and did not complete, their levels such as bronze, silver, and gold, and their stage in the course. The symbols used on the badges should be tailored to the age groups of the learners.

- *Points*; elements where learners can earn points, such as accessing the course page, course contents, learning resources, and assignments, posting on the discussion board, and completing assignments, should be determined at the outset. However, as stated in Gee's Principles (2003), the maximum points that can be obtained should not be announced to the learners, so learners should not be afraid to try new things. Also, frequency of visits to the digital learning environment should be limited to daily or weekly intervals. Otherwise, learners earn points for each visit to the system and keep logging in the system to continue earning points.
- One of the most important elements for gamifying a learning system is the *leaderboard*. While learners with the highest points are displayed and honored on the leaderboard, it is also critical that learners with lower scores are not displayed or disturbed.

Motivating Adults to Learn Through Gamification

Motivating adults to engage in learning activities can be a complex endeavor, as individuals often have established routines, responsibilities, and varied learning preferences. Gamification, with its ability to tap into intrinsic motivation and foster a sense of accomplishment, provides a compelling solution.

- *Personalization and Choice.* Adult learners appreciate autonomy and the ability to tailor their learning experience to align with personal interests and goals. Gamification allows for the integration of personalized pathways, where learners can choose their quests, challenges, or learning paths based on their preferences. Providing options for customization not only enhances engagement but also empowers adults to take ownership of their learning journey, making the experience more meaningful and relevant.
- *Real-world Application.* Adults are often motivated by the practical application of knowledge in real-life scenarios. Gamification can simulate these scenarios through immersive experiences, such as business simulations, case studies, or problem-solving challenges. By integrating real-world relevance into gamified elements, adults can see the immediate value of the skills they are acquiring, reinforcing their motivation to learn and apply knowledge in their professional or personal lives.
- *Social Collaboration and Competition.* The social aspect of learning plays a crucial role in motivating adults. Gamification can incorporate collaborative elements, allowing learners to work together on challenges, share insights, and learn from each other. Furthermore, healthy competition, whether through leaderboards or team-based achievements, can spark motivation by fostering a sense of camaraderie and the desire to excel. Social interaction within gamified environments can create a supportive community, encouraging continuous participation and knowledge sharing.
- *Immediate Feedback and Recognition.* Gamification provides a platform for instant feedback and recognition, addressing adults' desire for acknowledgment and progress tracking. Implementing mechanisms such as badges, certificates, or virtual rewards for achieving milestones not only reinforces positive behavior but also instills a sense of accomplishment. The timely recognition of achievements serves as a powerful motivator, encouraging adults to persist in their learning efforts and strive for continuous improvement.
- *Incorporating Storytelling.* Humans are inherently drawn to narratives, and storytelling can be a potent tool in gamification. By weaving a compelling narrative throughout the learning experience, educators can capture adult learners' attention and create an emotional connection to the content. Whether through immersive role-playing scenarios or narrative-driven quests, the storytelling element adds depth to the learning process, making it more engaging and motivating.
- *Flexibility and Accessibility.* Adult learners often juggle multiple responsibilities, making flexibility in learning crucial. Gamification accommodates this need by providing

asynchronous learning opportunities and allowing adults to progress at their own pace. Mobile-friendly platforms and the incorporation of bite-sized, easily digestible content contribute to accessibility, ensuring that learners can engage with gamified elements whenever and wherever it suits their schedule.

Future Directions

As technology continues to evolve, so too will the potential for innovative gamification strategies in adult education. Virtual reality, augmented reality, and artificial intelligence offer new avenues for immersive and personalized learning experiences. Future research should explore the long-term effects of gamification on adult learners and investigate emerging technologies that can further enhance the effectiveness of gamified curricula.

- *Virtual and Augmented Reality Integration.* The integration of virtual reality (VR) and augmented reality (AR) technologies into gamification opens new frontiers for immersive learning experiences. By providing realistic simulations and interactive scenarios, VR and AR can transport adult learners to dynamic environments, allowing them to apply theoretical knowledge in practical settings. These technologies have the potential to revolutionize professional training, enabling learners to engage in realistic simulations that mimic their actual work environments, thus enhancing the transfer of knowledge and skills.
- *Artificial Intelligence (AI) for Personalized Learning.* Artificial intelligence is poised to play a pivotal role in tailoring gamified content to individual learner needs. By analyzing learner behaviors, preferences, and performance, AI algorithms can dynamically adjust challenges, content, and feedback, creating a personalized learning journey. This adaptive approach ensures that each adult learner receives content that aligns with their skill level and learning style, maximizing engagement and knowledge retention. (Printen Shan, 2023).
- *Gamified Assessment and Credentialing.* The gamification of assessment processes presents a paradigm shift in how adult learners demonstrate proficiency. Moving beyond traditional exams, gamified assessments offer interactive challenges and simulations that assess practical application of knowledge. Furthermore, the integration of digital badges, micro-credentials, and gamified certification systems provides a more dynamic and visually appealing way to recognize and showcase adult learners' achievements, contributing to a sense of accomplishment and motivation.
- *Cross-disciplinary Integration.* The future of gamification extends beyond individual subjects or courses, aiming to foster cross-disciplinary learning experiences. Gamified curricula can incorporate elements from various fields, encouraging adults to explore connections between diverse areas of knowledge. This approach not only enhances critical thinking and problem-solving skills but also mirrors the interdisciplinary nature of real-world challenges, preparing adult learners for the complexities they may encounter in their professional and personal lives.
- *Gamification for Soft Skills Development.* In addition to technical competencies, there is a growing recognition of the importance of soft skills in the workplace. Future gamified curricula may focus on developing essential skills such as communication, collaboration, creativity, and adaptability. Through interactive scenarios, role-playing, and collaborative challenges, adults can hone these skills in a gamified environment, fostering well-rounded and adaptable individuals ready for the demands of the modern workforce.
- *Ethical Considerations and Inclusivity.* As gamification evolves, it is essential to address ethical considerations, ensuring that the design and implementation of gamified curricula prioritize inclusivity, accessibility, and fairness. Educators and developers must be mindful of potential biases in gamified systems and strive to create environments that cater to diverse learner profiles, backgrounds, and abilities. This approach ensures that the

benefits of gamification are accessible to all adult learners, promoting equitable opportunities for education and skill development.

Conclusion

Gamification represents a promising approach to motivate adults in their learning journey. By leveraging the intrinsic appeal of games, educators can create engaging and personalized experiences that foster a positive attitude toward learning. The integration of theoretical frameworks, practical strategies, and consideration of challenges paves the way for a comprehensive understanding of how gamification can contribute to the evolution of adult education.

Have you ever seen someone playing a video game? If you did, you most likely noticed the determination on their face. Work is something you must do, whereas play or a game is something you must not do (Pink, 2011). Gaming is a term used to describe a variety of voluntary, intrinsically motivated activities that are typically associated with recreational pleasure and enjoyment. As a result, that is the factor influencing our motivation.

In gameful design to foster learning and engagement, motivation is a commonly targeted mediator. Motivation explains variation in intensity, persistence, quality, and direction of behavior, whereas context reflects the direction, intensity, and persistence of learning directed-behavior in a learning environment (Landers et al., 2019). Points, badges, leaderboards, progress bars, quests, meaningful stories, and avatars are among the game elements identified by Sailer et al. (2013) as most likely to increase motivation in gameful design. Sümer and Aydın (2018) also adds that badges are the most commonly used game elements in gameful learning design. Then there is leaderboard, points, and levels. In gameful design, reward and achievement are also important and frequently used game elements.

Based on that, to recover the learning loss in adult learning gameful design would work. Gamification or gameful design is an emerging trend that involves using game mechanisms or elements in nongame contexts to increase a user's motivation and engagement. Here are our recommendations on how to design gameful learning for adult learners;

- Adult learners are self-directed, so *instructions/guidelines* should be given to them at the beginning and they should be encouraged to take responsibility for their own learning.
- Adult learners may require assistance in becoming more open minded. In video games, a learner can achieve goals in a variety of ways, such as playing to beat a level quickly rather than exploring every option available. So, there should be multiple routes to collect *points* and earn *badges*. This helps adult learners to be more open minded.
- Desire to learn or do something in order to complete a task determines one's readiness to learn. So, the tasks in gameful design should be chosen from real world examples and they should be explained well in the *instructions/guidelines* to the adult learners.
- Internal motivators such as recognition, self-esteem, self-confidence, and self-actualization are the most powerful sources for adults. *Badges* should represent those features and there should be a *leaderboard* to support recognition.

To summarize, there is no secret formula for incorporating gameful design into digital learning environments for adult learners. As a result, designers can use various elements in various combinations based on their learners' needs. However, at the end, it should be determined which game elements learners prefer over others, and the system should be updated.

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Emotional intelligence of convicted persons serving a prison sentence

Jan Tirpák, Arnošt Smolík, Anna Bruderhansová

Abstracts:
Based on a comprehensive theoretical analysis and a research investigation, the article presents findings in the field of comparison of the achieved level of development of the basic components of emotional intelligence in a total of 37 convicted persons serving a prison sentence. The research method used was the Emotional Intelligence Test - MSCEIT (Mayer et al., 2012). The results can contribute to a more significant individualization of the approach in penitentiary practice.

Key words:
Emotional intelligence, social and emotional competence, execution of a prison sentence, test of emotional intelligence – MSCEIT, penitentiary care, reintegration.

Introduction

The level of emotional intelligence and the degree of development of emotional-social competences are aspects that significantly influence an individual's ability to function within social formations. According to research carried out in the past two decades, a higher level of emotional intelligence development is associated with a lower level of interpersonal problems or better stress management (Mayer et al., 2004), positive results in the area of health (Martins, Ramalho, & Morin, 2010), but also, for example, with a lower rate of violence or a lower rate of problems with addictive substances, especially among men (Brackett et al., 2006; Mayer et al., 2004).

With this in mind, we consider the examination of the degree of development of emotional intelligence and social competences, as a starting point for working with convicts serving a prison sentence, to be a relevant topic for the specific area of andragogic action, which is penitentiary care. The research instrument in our investigation is the Emotional Intelligence Test (MSCEIT), which was used by, for example, Ermer, Kahn, Salovey and Kiehl in research with a target group of incarcerated men in the United States (2012).

1. Theoretical Basis

Defining emotional intelligence itself is difficult given the terminological inconsistency in professional sources. A generally accepted definition of the construct of emotional intelligence does not yet exist (Schulze & Roberts, 2007). Salovey and Mayer (1990) were among the first to define the term as a new, hierarchically organized type of intelligence enabling an individual to think about emotional information, understand it, connect it with thoughts, and then perform optimally based on it. Emotional intelligence has since been considered a separate psychological construct. Some authors define emotional intelligence as a set of abilities (Goleman, 2000; Salovey & Grewal, 2005) that make it easier to recognize our own feelings and the feelings of others, help to control them and postpone possible self-gratification or motivation. On the other hand, it can also be seen as a personality trait (Brackett & Mayer, 2003; Hasson, 2015). Conceptualized in this way, emotional intelligence represents an individual's behavioral disposition, and the perception of one's own abilities is related to the individual's cognitive abilities (Petrides & Furnham, 2003; Neubauer & Freudenthaler, 2005).

Self-awareness can be considered as one of the basic elements of emotional intelligence. (Wedlichová, 2003). It primarily includes self-awareness of one's own emotions, awareness of one's own boundaries and one's positive and negative sides. We also include self-concept, self-confidence, self-assurance, and self-observation. A necessary part of self-awareness is to some

extent self-control (Goleman, 2011). Self-control is characterized by reliability, adaptability, conscientiousness, the ability to innovate. It is the ability to control oneself and one's moods and react in such a way as to effectively manage stress, complex situations, and various crises (Wharam, 2014). Bariso (2019) also includes social awareness and relationship management in addition to the above-mentioned abilities of emotional intelligence. Social awareness is the ability to recognize the feelings of others and then understand how they affect their behavior. In contrast, relationship management consists mainly of using social interactions (Wood, 2003; Schutte & Malouff, 2008). According to Slaměník (2011), it is also about the ability to influence others and their behavior.

As part of our research, we focus on people in prison. Imprisonment is a specific social sanction and a turning point in the convict's life (Fischer & Škoda, 2009). Among the main means of educational influence on the convicted person is a system of activities and proceedings that take place throughout the day, which are divided into professional parts (Raszková & Hoferková, 2013). Currently, the goal of education is to fulfill the tasks of correction of convicted persons based on individual procedures (Veteška & Fischer, 2020). In this respect, work with convicted individuals should be focused on eliminating the adverse effects of imprisonment and motivating them to change their behavior (Jandourek, 2001). Change is mediated through direct action on the convicted individual, where the sense of responsibility is strengthened, and positive social habits and ethical attitudes are acquired. Strengthening social competences, suppressing social and social incapacity is also important. To create realistic life prospects, not only general methods can be used, but also specific procedures for treating prisoners, including a range of pedagogical, andragogic, social, psychological, or psychiatric methods (Veteška, 2015).

The treatment program is the basic form of purposeful and comprehensive action on a convicted person serving a prison sentence. The programs are divided into work activities, educational activities, special educational activities, interest activities and the area of shaping external relations. (Kujevská, 2014) Above all, special educational activities may include training and therapeutic activities, such as social skills training, training to manage one's own aggression, intervention in crisis situations, individual or group therapy.

Considering that a higher level of emotional intelligence has been found to influence an individual's behavior, relationships, and health (Brackett & Mayer, 2003; Salovey & Grewal, 2005; Panju, 2008), it can be said that this is a part of social intelligence (Shapiro, 2009), including the ability to monitor one's own and others' feelings and emotions, distinguish them and use this information in one's thinking and actions. We believe that understanding emotional intelligence in incarcerated individuals can provide us with information leading to its effective development in this setting. According to Bradbury (in Wilding, 2010), emotional intelligence is more of a skill and can therefore be taught and developed.

2. Methodological Resources

The research was carried out using the standardized Test of Emotional Intelligence - MSCEIT (Mayer et al., 2012). The research was carried out on a sample of 37 respondents (20 of whom were women and 17 men) who were sentenced to imprisonment in two prisons in the Czech Republic.

The examined level of emotional intelligence can be briefly described using a single overall level of performance, but it can also be divided into experiential and strategic areas (Mayer & Salovey, 1997). Objective and performance-based assessment is important when measuring emotional intelligence. It is this type of assessment that our chosen MSCEIT research test contains. It displays the results of emotional intelligence into four main components, representing the ability to perform the following tasks: *a)* the ability to adequately perceive emotions, *b)* access emotions, arouse them and use them to support thinking, *c)* understand emotions and emotional cognition, *d)* to regulate emotions to aid emotional and intellectual growth (Mayer & Salovey, 1997).

The perception of emotions, described in the first component of the model of emotional intelligence, is the ability to adequately reflect one's emotions and the emotions of other people, as well as in objects, stories, art, music, and other stimuli. The second component focuses on the use of emotions as the ability of an individual to arouse, use and feel emotions or to use them in other cognitive processes. The third component deals with emotional understanding, which is the ability to correctly understand emotional information, to be able to estimate emotions during relationship changes and to be able to evaluate emotional information. The last component characterizes the ability to control and recognize emotions in oneself and in other people. Proper regulation promotes self-understanding and personal growth (Mayer et al., 2012) The main scores calculated on the MSCEIT are a total emotional intelligence score, two emotional intelligence domain scores, four emotional intelligence component scores, and eight individual subtest scores (chart I).

Chart I: The Structure of the Emotional Intelligence Model in the MSCEIT

Total (summary) scale	**Two domain MSCEIT scores**	**Four component MSCEIT scores**	**Subtests**
Emotional intelligence (EQ)	Emotional intelligence based on experience	Perception of emotions	Faces
			Pictures
		Using emotions	Support
			Sensory impressions
	Strategic emotional intelligence	Understanding emotions	Changes
			Complex emotions
		Managing emotions	Managing emotions
			Managing emotions in relationships

Source: own processing: Mayer et al., 2012

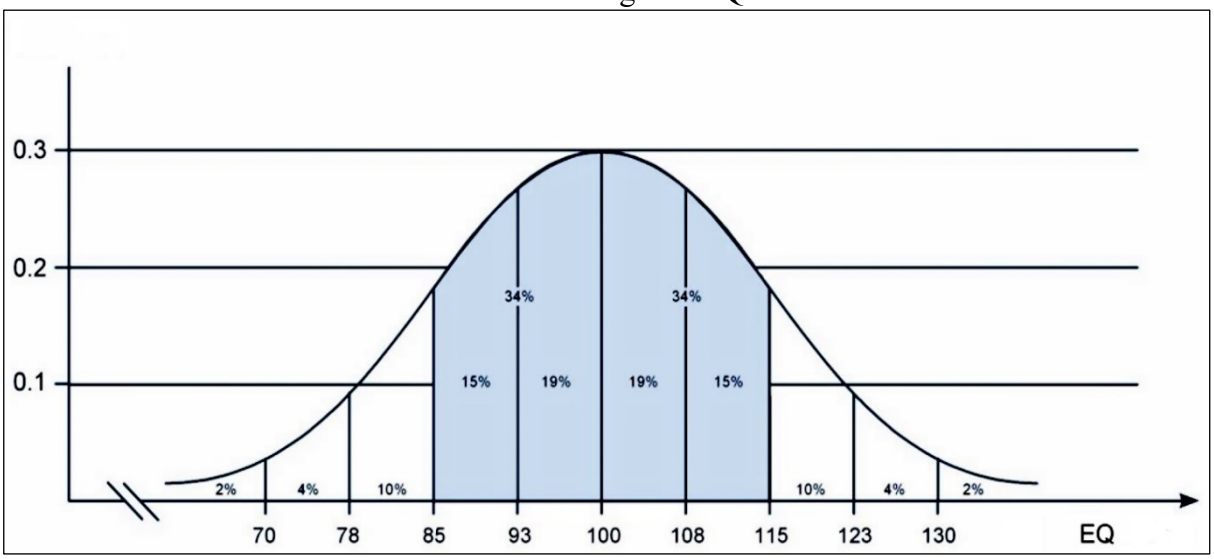
MSCEIT scores are first calculated as empirical percentiles, which are then fitted to a normal distribution curve with a mean of 100 and a standard deviation of 15. Further descriptions of the range of scores are presented in Chart III. A summary score compares an individual's performance with the performance of persons in a normative sample. A normal distribution of MSCEIT test results is shown in Figure 1, where the values below the curve represent the percentage of people in the marked section. The values on the x-axis subsequently indicate the EQ-score, the values on the y-axis the relative frequency.

Chart II: Guidelines for interpreting scores in the MSCEIT

EQ range	**Qualitative range**
69 and under	Recommended to develop intensively
70 – 89	Recommended for further improvement
90 – 99	Lower average
100 – 109	Higher average
110 – 119	Above average abilities
120 – 129	Significantly above average abilities
130 and more	Excellent skills

Source: own processing: Mayer et al., 2012

Chart 1: Normal distribution of emotional intelligence EQ scores in the MSCEIT



Source: own processing: Mayer et al., 2012

Emotional intelligence based on experience describes the degree of perception and knowledge of emotional events, the ability to relate this experience to other own experiences and understand how these events affect thinking.

The emotion perception component score in the MSCEIT test is divided into two subtests, face perception and picture perception.

The emotion utilization component refers to supporting intellectual processes through emotions. The use of emotions is divided into two subtests, emotions in thinking and emotions in perception.

Strategic emotional intelligence affects a person's ability to understand the meaning of emotions. This also includes understanding the implications of emotions on relationships and dealing with one's own and other people's emotions. These abilities interact with each other so that the overall emotional intelligence score reflects a general ability to handle emotions.

The emotion understanding component score includes an individual's ability to understand emotions and subsequently use this knowledge. Understanding emotions is divided into two subtests: changes and complex emotions. The change subtest tests the respondent's knowledge about the possibilities of intensification of emotions (for example, anger develops when strengthened), respectively about the possible transitions of a certain emotion to another emotion (for example, envy turns into shame depending on the situation). The complex emotion subtest verifies the respondent's knowledge regarding the composition of different emotions into one comprehensive emotion. The individual chooses from the five given answer alternatives the one with which, in his opinion, it is possible to complete the unfinished sentence. To solve this subtest, the individual must be able to break down a complex emotion into its components or combine several emotions into another more complex one.

The emotion management component involves the conscious management of emotions, both in oneself and in others, for the benefit of emotional and intellectual development. Emotion management is divided into two subtests: emotion management and emotion management in relationships. The emotion management subtest measures an individual's ability to adequately involve their own emotions in the search for solutions, i.e. to regulate their own emotions. To correctly solve the subtest, the individual must be able to relate to the person described in the given situation. The individual puts himself in the situation of a person who must regulate his emotions in a given situation. The emotion management subtest is similar in its principle, but the difference is in the last task. It discovers the ability to regulate emotions in situations in which other people also participate. The respondent is given a description of three situations, while

estimating the effectiveness of the presented three responses in terms of achieving the goal. (Mayer et al., 2012)

3. Results

The Hogrefe Testsystem – version 5 (HTS 5) was used for statistical data analysis. From the point of view of the research quest, we compare the detected values of emotional intelligence (EQ) in the MSCEIT model, where: Ø = arithmetic means of the detected EQ, min. = minimum, max. = maximum, N = number of respondents, SD = standard deviation (dispersion of a set of values)

Since the division of the entire chapter will be quite detailed, for clarity, we present a simplified graphical and tabular presentation of the results with a diagram describing the order of partial conclusions of emotional intelligence values for the entire observed group of 37 convicted persons serving a prison sentence (of which there were 20 women and 17 men).

Chart III: Determined emotional intelligence (EQ) values in the MSCEIT model/all respondents.

	Ø	SD	min.	max.
Aggregate score				
i) The total value of emotional intelligence	78.76	11.03	58.00	102.00
The total value of emotional intelligence				
ii) Emotional intelligence based on experience	84.89	14.86	58.00	106.00
iii) Strategic emotional intelligence	77.30	10.97	63.00	107.00
Emotional intelligence based on experience				
iv) Perception of emotions	90.76	15.72	61.00	120.00
v) Using emotions	83.54	11.50	63.00	101.00
Strategic emotional intelligence				
vi) Understanding emotions	78.14	11.05	63.00	109.00
vii) Managing emotions	82.68	18.11	58.00	121.00

Source: own processing

i) Although it is possible to describe MSCEIT performance with a single summary score (Ø = 78.76 SD = 11.03), individual area scores may provide insight into potential differences between the ability to perceive and use emotions and the ability to understand and manage emotions. The total value of the emotional intelligence of our group is in the area of recommended improvement (range EQ 70 - 89).

ii) The Experiential Emotional Intelligence score (Ø = 84.89 SD = 14.86) maps the respondent's ability to perceive and process emotional information and respond to it without necessarily understanding it. It represents how accurately the respondent can recognize and express an emotion and how well they can compare this emotional information with other kinds of sensory experiences (such as colors or sounds). The score can also be an indicator of how the proband functions under the influence of various emotions. The overall emotional intelligence value of our research set is again in the recommended improvement range (EQ range 70 – 89).

iii) The strategic emotional intelligence score (Ø = 77.30 SD = 10.97) is an assessment of the respondent's ability to understand and manage emotions without necessarily being able to perceive them adequately or fully experience them. It is an indicator of how accurately the respondent understands what emotions signal (for example, sadness typically means loss) and how it is possible to control them in oneself and in others. The total value of the emotional intelligence of our group is in the area of recommended improvement (range EQ 70 - 89).

The MSCEIT allows to find out the results even for individual component scores, providing information about the respondent's specific emotional abilities. These are the four component scales: perception of emotions, use of emotions, understanding of emotions and management of emotions.

iv) The emotion perception score (Ø = 90.76 SD = 15.72) represents the ability to recognize how the person himself and the people around him feel. The first component of the emotional intelligence model represents the ability to perceive and express feelings. Emotional perception refers to focusing attention and accurately recognizing emotional signals in facial expressions, tone of voice, and artistic expression. The MSCEIT measures the level of judging emotions in other people and in pictures. In this component, the perception of emotions is complemented by the ability to adequately express emotions or verbalize the needs that are connected to these emotions. The total emotional intelligence value of our research group is in the lower average range (EQ range 90 – 99).

v) The emotion utilization component score (Ø = 83.54 SD = 11.50) shows the extent to which the respondent's thinking and other cognitive processes are enriched by emotional experiences. For example, the ability to use one's emotions can help a person solve problems in a creative way. This component score is focused on how emotions affect the cognitive system and how they can be used in this regard for more effective reasoning, problem solving, decision making and better creativity. The total value of the emotional intelligence of our group is in recommended improvement (range EQ 70 - 89).

vi) Emotions create a rich set of intricately interconnected symbols, which is why many consider the existence of an emotional language itself (Ortony et al., 1988). The emotion understanding component (Ø = 78.14 SD = 11.05) includes the ability to label emotions and to recognize that there are groups of related emotional concepts. Understanding of what leads to different emotions is a very important aspect of emotional intelligence. Awareness of how emotions combine with each other and how they change over time plays an important role in our interactions with others, but also in developing our own self-understanding. The total value of the emotional intelligence of our group is around recommended improvement (range EQ 70 - 89).

vii) The last component of the model is emotion management (Ø = 82.68 SD = 18.11). It is necessary to realize that the ability to successfully regulate emotions often presupposes their awareness, acceptance and use in solving problems. Many people understand the term emotion regulation as suppressing or rationalizing emotions. However, managing emotions rather means involving emotional experience in thought processes and allowing emotions to be included in thinking. The total value of the emotional intelligence of our group is around recommended improvement (range EQ 70 - 89).

4. Discussion and Conclusion

The results of the research quest, which were used to compare and describe the emotional intelligence of convicted persons serving a prison sentence, were obtained using the standardized MSCEIT Test - Test of Emotional Intelligence, which was evaluated with the help of HTS 5 (Hogrefe Testsystem). To consider the topic of this research, the respondents were selected from among convicted persons serving a prison sentence, when the lowest sentence was 6 months and the longest was 11 years. The research was carried out on a sample of 37 respondents (20 of whom were women and 17 men) who were sentenced to imprisonment in two prisons in the Czech Republic. The research showed that the total average value of emotional intelligence of all respondents together is Ø = 78.76, i.e. in recommended improvement (EQ = 70 – 89), the lowest total value of emotional intelligence is EQ = 58 and the highest total value of emotional intelligence is EQ = 102 EQ.

In essence, the MSCEIT should be able to predict how a person will behave in the long term and across different situations. However, it cannot predict certain behavior in a specific case. However, low scores are usually a true reflection of the respondent's abilities (Mayer et al., 2012). If someone has average emotional intelligence, he can gain more knowledge about emotions, and the more knowledge he has, the better his performance in the field of emotional reasoning will be. There are some research findings that emotional intelligence can be learned (Greenberg, Kusche, Cook & Quamma, 1995). In accordance with Bradberry's concept (Wilding, 2010), systematic

work on the development of the emotional intelligence of prisoners can also bring significant positive effects on their individual behavior, social relationships, or health, in accordance with the findings of Brackett and Mayer (2003), Salovey and Grewalová (2005) or Panju (2008).

We believe that it is therefore necessary to approach convicted persons serving a prison sentence individually and to focus educational efforts on strengthening primarily social competences. All this should be considered in the treatment program, when training and therapeutic activities should be included to a sufficient extent as part of special educational activities. Here we mainly emphasize the use of social skills training, training to manage one's own aggression, intervention in crisis situations, individual or group therapy. In the case of controlling and managing emotions, self-control and self-management are important. Failure of self-control can be associated with depression, obsession or aggression. A myriad of problems can also be related to a lack of self-regulation. The ideal approach to work with convicted persons serving a prison sentence is therefore the use of an educational style where successful manifestations of control of attention, emotions and motivation are valued more than the results of activity (Stuchlíková, 2002).

Although the research results are limited by the finite scope of the research sample, in our opinion, they bring very little researched and presented data so far in the Czech Republic. We consider monitoring the development of emotional intelligence in a given target group to be a promising topic. Finally, we consider it important to present important aspects of the penitentiary work to the wider society. In our opinion, this could contribute to the reduction of stereotypes, demands for stricter punishments or alleviation of concerns in relation to persons released from serving a sentence (cf. Svoboda et al., 2022).

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Analysis of Social Competences in Persons Serving a Prison Sentence as a Starting Point for the Implementation of Educational Activities

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Abstracts:
The paper is focused on the presentation of the results of the examination of social competences in convicted persons serving a prison sentence. The research was carried out using a standardized ISK test - Inventories of Social Competences (Hoskovcová & Vašek, 2017) on a sample of 57 men. The output is findings that can be used in educational work with convicts, especially in the context of developing their competencies for successful reintegration into society and prevention of recidivism.

Key words:
Social competence, penitentiary care, resocialization, serving a prison sentence, education.

Introduction

In today's society, the issue of social competence is increasingly at the forefront of professional interest, as the ability to function effectively and harmoniously in society becomes key not only for individual success, but also for the social functioning and cohesion of society as a whole. One of the groups that face specific challenges in the field of social competences are persons serving a prison sentence. In our opinion, understanding the level of social competence development achieved by persons serving a prison sentence can lead to more effective support for them in this environment and subsequently enable a successful return to society. From the point of view of research, but also the needs of andragogic educational practice, it is therefore a current and beneficial topic.

1. Theoretical Basis

As part of the professional discourse, no agreement has yet been found on a generally accepted and single consensual definition of the concept of competence (Kauffeld, Frieling, & Grote, 2002; Matthews, Zeidner & Roberts, 2002). Some authors (Darden & Gintner, 1996; Belz & Siegrist, 2001; Kanning, 2003; Vališová & Kasíková, 2011; Matoušek, 2016) however, understand competence as a set of knowledge, skills, abilities, attitudes, and values. Among the key characteristics of competences is that they are universal and are not limited to a specific field of education or life situation (Průcha et al., 2013). In connection with the concept of competence, we can therefore also encounter expressions such as professional competence, expert competence, or personal competence. However, it is always necessary to realize that these concepts overlap in many cases, which is related to the very nature of the competences (Tureckiová & Veteška, 2008). In our article, attention is mainly paid to social competences, representing a set of knowledge, skills, abilities, attitudes, and values, enabling to lead and develop meaningful social interaction with one's surroundings (Nakonečný, 2000).

Therefore, social competence includes an individual's ability to control their behavior at various levels such as thinking, emotion and visible action. This ability enables individuals to express their emotions and needs in an appropriate way, to cope effectively with various social situations and demands when interacting with other people, and also to achieve their personal and inner goals (Petermann & Petermann, 2003). It is also necessary to emphasize the fact that social competence does not only include abilities, knowledge and experience related to social behavior, but also social characteristics, motives, and attitudes, manifested in effective actions. (Barták & Demjanenko, 2021) On the other hand, Smékal (2002) perceives the core of social

competences in the ability to know oneself and understand others within the framework of social interaction. Social competence in this context depends on the ethical standards of the individual and the principles of life according to which they are governed.

Therefore, in a general sense, social competences represent the personality component of an individual, including diverse abilities that can be manifested in a person's behavior and skills. (Gillernová et al., 2012) From the point of view of acquired social competences, an individual should therefore always be able to adapt to the social situation in which he finds himself (Kanning, 2009; Hoskovcová & Vašek, 2017). According to this assumption, the acquisition of social competences is based on the assumption that the positive effects of appropriate social behavior led to positive feedback, supporting the development of social competences. (Nakonečný, 2000) From the above, we also understand social competences as learning-acquired prerequisites for adequate social interaction and communication. (Komárková et al., 2001)

The area of our research interest is social competence in individuals serving a prison sentence. They are the target group of action in the field of penitentiary care. Its goal is the correction of an individual who has fundamentally violated serious social norms, his resocialization and return to society. Among the basic functions of penitentiary care is re-education (a conscious change in the convict's thinking, leading to the elimination of dysfunctional models of behavior), resocialization (conscious acceptance of models, enabling the convict to return to society), readaptation (the convict systematically prepares himself to accept the conditions of society in order to lead a problem-free life), rehabilitation (shifting the convict to life values that are in line with ethical behavior) and reintegration, that is, the process of returning to society, when all broken relationships, bonds and structures are reconnected (Batiuk et al., 1997; Černíková & Sedláček, 2002; Steurer & Smith, 2003; Lochner & Moretti 2004). For this purpose, a number of activities and programs focused on educational and psychosocial intervention are implemented in the prison environment. In the Czech Republic, as part of resocialization programs, emphasis has long been placed on the re-educational potential of serving a prison sentence. They are mainly used for work, special educational, leisure and educational activities (Čírtková, 1998; Matoušek & Kroftová, 2003). Abroad, more significant attention is currently being paid to the issue of psychological intervention and its effectiveness (Kirkpatrick et al., 2018; Beaudry et al., 2021; Ward et al., 2022).

2. Methodological Resources

The main research question of our examination was formulated as follows: What is the level of development of selected social competences in persons serving a prison sentence? The goal of the examination was to analyze the achieved level of development of social competences and to suggest the possibilities of using the results for further educational work with the specified target group.

The research was carried out on a sample of 57 convicted men serving a prison sentence in Litoměřice Prison in the Czech Republic. A standardized questionnaire - Social Competence Inventory was used to collect data -ISC (Hoskovcová & Vašek, 2017), which is the Czech version of the “Inventar Sozialer Kompetenzen Test” (Kanning, 2009).

We used the full version of the ISC, which includes 108 items. The ISC consists of 17 primary scales grouped into 4 secondary scales. The individual questions of the ISC survey are arranged in such a way that the items satisfying the same scale have the greatest possible distance between them. Approximately half of the items are scored negatively. The Social Competence Inventory-ISC works on the principle of self-assessment and the answers reflect the self-assessment of the examined person. The proband reads the statements and expresses himself on a four-point scale (from 1 = I do not agree at all to 4 = I completely agree). The result of the raw score can then be converted to selected standardized values (percentile, stanine, standard score). Therefore, in this text, we decided to compare the always achieved percentile ranking. Only to clarify and specify the results, we present the abbreviations of the research investigation used by us, when from the point of view of designation, we work with the following areas of investigation:

(PRO) prosociality, (PPE) perspective taking, (PHO) plurality of values, (KOM) willingness to compromise, (NAS) listening, (SPR) the ability to assert oneself, (OKF) willingness to conflict, (EXT) extraversion, (ROZ) determination, (SEK) self-control, (EST) emotional stability, (FCH) behavioral flexibility, (INT) internality, (SEP) self-presentation, (PPS) direct attention to oneself, (NPS) indirect attention to oneself, (VNO) perception of persons. Among the secondary scales we rank: (SO) social orientation, (OF) offensiveness, (SE) self-control and (RE) reflexibility.

The statistical quantities that are presented in the tables in the descriptive part of this text are in agreement with the professional literature (Hendl, 2012). As part of this research, we compare the achieved percentile ranking of the respondents, where t = test criterion of the appropriate type of Student's t-test for equal or unequal variances from the point of view of comparing the arithmetic means of two independent data samples, P_t = the observed significance level of the test criterion of the respective type of Student's t-test, SD = standard deviation (variance of a set of values), F = test criterion of the Fisher-Snedecor test for comparing the variances of two independent data samples, PP = percentile ranking, Ø = arithmetic mean, min. = minimum, max. = maximum, N = number of respondents, p = level of importance (p-level). For calculations, we used the so-called Student's t-test and ANOVA analysis of variance (*analysis of variance*) at the level of significance α = 0,05. Statgraphics Centurion XVI software was used for statistical evaluation of data and creation of graphs.

3. Results

The first area we monitored was (SO) social orientation. From the point of view of comparison of the mentioned area, ANOVA variance analysis was used at the level of significance α = 0.05. The value of the test criterion in the field of social orientation (SO) was F 2.06 and Pt 0.086, i.e. greater than 0.05. We can conclude that the observed variances are the same between the compared areas.

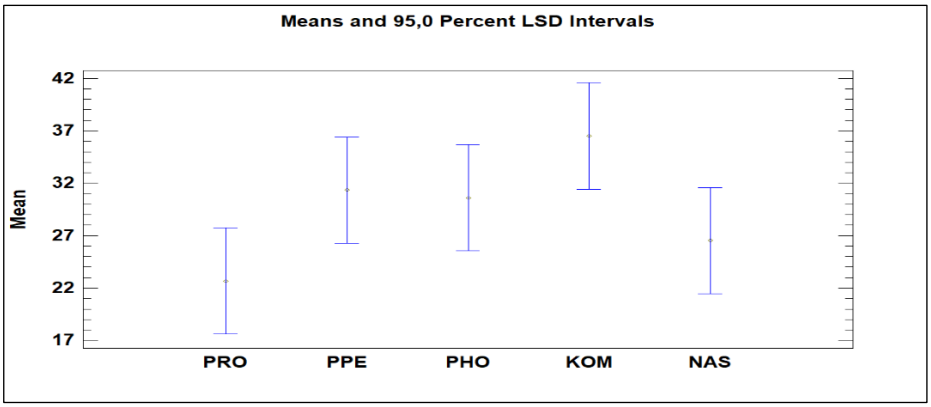
In terms of content, we can basically describe the concept of social orientation as follows. Persons with a high social orientation generally have a positive attitude towards other people. They can successfully empathize with another person and see the world through their eyes. A good ability to listen helps them. They are tolerant of various norms and values. When resolving conflicts, they actively consider the interests of the other party. (Hoskovcová & Vašek, 2017) Social orientation is manifested primarily by the perception of other people. Furthermore, it expresses the ways in which they influence us and create relationships with the environment.

Chart I: Descriptive analysis of the results from the point of view of the area (SO) social orientation/prosociality (PRO), perspective taking (PPE), plurality of values (PHO), willingness to compromise (KOM), listening (NAS)

	N	Ø	SD	Min	Max	Scope
PRO	57	22.684	28.146	1.0	96.0	95.0
PPE	57	31.351	26.820	1.0	95.0	94.0
PHO	57	30.614	28.497	1.0	100.0	99.0
KOM	57	36.509	25.568	3.0	90.0	87.0
NAS	57	26.526	28.249	1.0	100.0	99.0
Total	285	29.537	27.683	1.0	100.0	99.0

Source: own processing

Graph 1: Interval graph of results depending on the percentile of measurements in individual areas (SO) social orientation/prosociality (PRO), perspective taking (PPE), plurality of values (PHO), willingness to compromise (KOM), listening (NAS)



Source: own processing

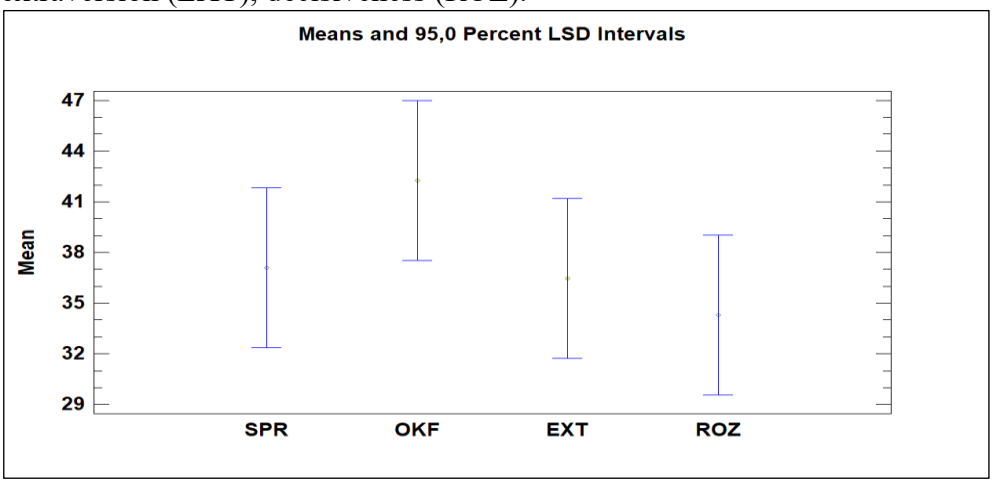
The second secondary scale is (OF) offensiveness. A given area consists of these dimensions: the ability to assert oneself (SPR), willingness to conflict (OKF), extraversion (EXT), determination (ROZ). Since the grouping variable has more than two variables, ANOVA analysis of variance was again used in this regard for the overall comparison. The test criterion value in the area of offensiveness (OF) was F 0.99 and Pt 0.396, i.e. higher than the observed significance level of 0.05. We again find no statistically significant difference between the individual groups. The secondary scale of offensiveness is based on the values of the four primary scales mentioned above. High offensiveness means that the proband actively approaches other people and establishes contacts with them. At the same time, he successfully promotes his own interest and behaves decisively. Such an individual confronts conflicts without intentionally provoking them. (Hoskovcová & Vašek, 2017)

Chart II: Descriptive analysis of the results in terms of the area (OF) offensiveness/ability to assert oneself (SPR), willingness to conflict (OKF), extraversion (EXT), decisiveness (ROZ)

	N	Ø	SD	Min	Max	Scope
SPR	57	37.1053	28.6199	1.0	93.0	92.0
OKF	57	42.2632	27.6964	2.0	94.0	92.0
EXT	57	36.4561	20.4215	1.0	80.0	79.0
ROZ	57	34.2807	24.8767	1.0	95.0	94.0
Total	228	37.5263	25.6021	1.0	95.0	94.0

Source: own processing

Graph 2: Interval chart of results depending on the percentile of measurements in individual areas (OF) offensiveness/ability to assert oneself (SPR), willingness to conflict (OKF), extraversion (EXT), decisiveness (ROZ).



Source: own processing

The third area is self-control (SE), which consists of self-control (SEK), emotional stability (EST), behavioral flexibility (FCH), internality (INT). High levels and scores in the area of self-control represent a person who perceives himself as an important cause of events in his environment and the originator of his own behavior. The mentioned area is further characterized by an individual's balanced emotional experience and calm behavior in stressful situations, maintaining control over behavior and flexible response to changes in the environment (Hoskovcová & Vašek, 2017).

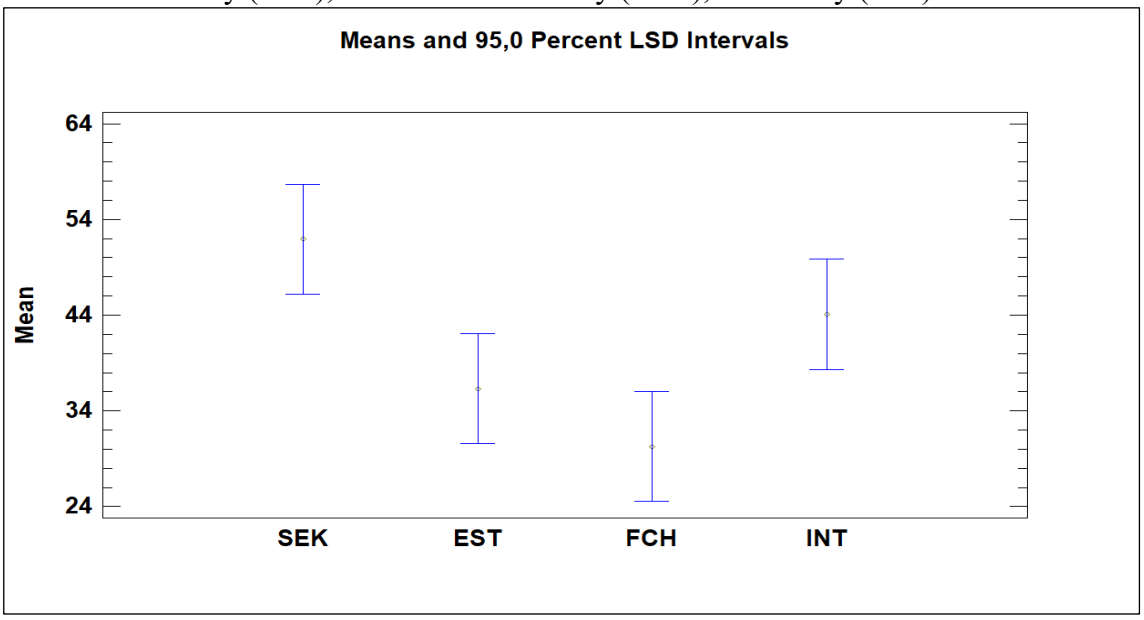
When comparing the arithmetic means of the percentile rank for individual persons serving a prison sentence, we found an F value of 5.23 and a Pt value of 0.002. As part of the research carried out, we found that in the area of self-control, the observed level of significance $\alpha = 0.05$ is lower. We can conclude that the observed sets and their variances are not identical. This can also be seen in Chart III and Graph 3. It is therefore necessary to subject the data to a post-hoc analysis. Its conclusions will be authoritative as to which areas of self-control there are statistically significant differences. Based on a specific post-hoc analysis (Chart IV) in the area of (SE) self-control, a statistically significant difference in the achieved percentile values was shown, especially in relation to self-control (SEK). The area of self-control (SEK) is statistically significantly better in the achieved percentile of values than the area of emotional stability (EST) and behavioral flexibility (FCH). Another statistically significant difference can be seen in the dimensions of internality (INT) and behavioral flexibility (FCH).

Chart III: Descriptive analysis of the results in terms of the area (SE) self-control/self-restraint (SEK), emotional stability (EST), behavioral flexibility (FCH), internality (INT)

	N	*Ø*	*SD*	*Min*	*Max*	*Scope*
SEK	57	51.9649	33.5293	1.0	98.0	97.0
EST	57	36.3333	30.7933	1.0	100.0	99.0
FCH	57	30.2632	26.1838	1.0	100.0	99.0
INT	57	44.0877	33.3436	1.0	99.0	98.0
Total	228	40.6623	31.9618	1.0	100.0	99.0

Source: own processing

Graph 3: Interval graph of results depending on the percentile of measurement in individual areas of (SE) self-control among respondents of the research survey: self-restraint (SEK), emotional stability (EST), behavioral flexibility (FCH), internality (INT)



Source: own processing

Chart IV: Post-hoc analysis of differences in the area (SE) self-control/self-restraint (SEK), emotional stability (EST), behavioral flexibility (FCH), internality (INT)

----------	**SEK**	**EST**	**FCH**	**INT**
SEK	----------	$\boldsymbol{P_t = 0.01}$	$\boldsymbol{P_t = 0.00}$	$P_t = 0.21$
EST	$\boldsymbol{P_t = 0.01}$	----------	$P_t = 0.26$	$P_t = 0.20$
FCH	$\boldsymbol{P_t = 0.00}$	$P_t = 0.26$	----------	$\boldsymbol{P_t = 0.02}$
INT	$P_t = 0.21$	$P_t = 0.20$	$\boldsymbol{P_t = 0.02}$	----------

Source: own processing

From the above research results, it may therefore be very likely that a high level of self-control (SEK) in persons serving a prison sentence ultimately represents the necessity to adapt to the regime and structure of prison life. Individuals are forced to control their impulses and emotional expressions in a challenging environment where they are routinely confronted with various challenges and stressors. Self-control (SEK) can thus become a key tool to maintain calm and stability in a prison environment. Conversely, a lower level of emotional stability and behavioral flexibility may be a consequence of the significant stress that individuals are exposed to in the prison environment. Limited freedom, separation from loved ones and uncertainty about the future can create a burden that negatively affects emotional stability and behavioral flexibility. Individuals may have limited opportunities to express their emotions and seek emotional support, which may lead to low scores in this area. We can also state that self-control represents a more pronounced social competence in persons serving a prison sentence, which may be the result of adaptation to the specific prison environment and the work of the staff. In contrast, on the other hand, emotional stability shows statistically lower percentile values, probably due to the burden and stress associated with imprisonment. These results open the way to a greater understanding of how prison conditions can affect the social competence of people serving a prison sentence.

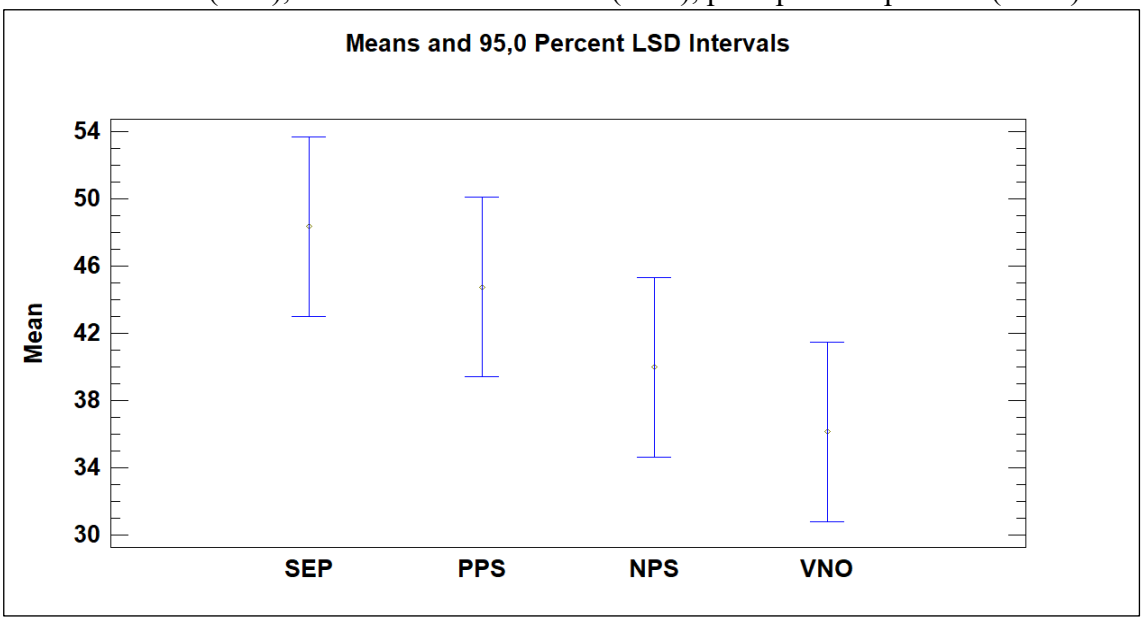
The fourth last area is (RE) reflexivity, where we measured the results of summary statistics in relation to the arithmetic means of the percentiles of order F 1.96 and Pt 0.122. The result we found is higher than the observed level of significance $\alpha = 0.05$. We can conclude (chart V, graph 4) that the observed sets and their dispersions are identical in the areas: self-presentation (SEP), direct attention to self (PPS), indirect attention to self (NPS), perception of persons (VNO)

Chart V: Descriptive analysis of results from the point of view of the area (RE) reflexivity/self-presentation (SEP), direct attention to self (PPS), indirect attention to self (NPS), perception of persons (VNO)

	N	***Ø***	***SD***	***Min***	***Max***	***Scope***
SEP	57	48.3509	29.8469	1.0	99.0	98.0
PPS	57	44.7544	28.8786	1.0	94.0	93.0
NPS	57	39.9825	29.2700	1.0	95.0	94.0
VNO	57	36.1404	27.5470	1.0	95.0	94.0
Total	228	42.3070	29.0799	1.0	99.0	98.0

Source: own processing

Graph 4: Interval graph of results of respondents depending on the percentile of measurement in individual areas of (RE) reflexivity, in research of survey/self-presentation (SEP), direct attention to self (PPS), indirect attention to self (NPS), perception of persons (VNO)



Source: own processing

The secondary scale of reflexivity covers the way in which an individual deals with himself and other people. High reflexivity means that the individual is able and perceives his own behavior in interactions and also understands the interaction of partner's reactions to his own behavior. He also deals with the needs and ways of behavior of others and tries to adapt. (Hoskovcová, Vašek, 2017)

At this point, we have to mention the fact that the standardized questionnaire method we mentioned has its limits when measuring social competences. As this is the proband's own self-assessment, which may represent a distortion of the view or, possibly, a stylization of one's own competence. However, this can also be interpreted in research as the capacity to behave in a desirable way and therefore be perceived positively in the final result. However, the advantage of the method we used is undoubtedly the possibility of conveying information about a relatively wide range of social competences.

Discussion and Conclusion

Here we summarize and discuss the results of the comparison of all four secondary scales of the ISK-Inventory of Social Competences, where we classify social orientation (SO), offensiveness (OF), self-control (SE) and reflexivity (RE). From the point of view of all four secondary scales, a statistically significant difference was found in the area of self-control (SE). Based on a specific post-hoc analysis (chart IV) in the area of (SE) self-command, a statistically significant difference in the achieved percentile values was shown, especially in relation to self-control (SEK). The area of self-control (SEK) is statistically significantly better in the achieved percentile of values than the area of emotional stability (EST) and behavioral flexibility (FCH). Another statistically significant difference can be seen in the dimensions of internality (INT) and behavioral flexibility (FCH).

As part of our research, we used the method of comprehensive diagnosis of social competences. The method monitors social competence as a set of skills, abilities, and knowledge that a person needs to solve specific interpersonal situations (Kanning, 2009; Hoskovcová & Vašek, 2017). It can thus be said that it provides experts involved in educational activities with convicts with important materials for the implementation of activities aimed at the further development of competencies important for resocialization into society. However, it should be

noted that a similar principle could also be used in other types of facilities working with persons with severe socialization deviations or persons with behavioral disorders (in more detail, for example, Smolík, 2016; Smolík, Svoboda et al., 2012).

In our opinion, therefore, it is absolutely crucial to focus on several key aspects regarding the individual serving a prison sentence. This is, for example, a comprehensive assessment of his dynamic personality structure, interpersonal behavior, resistance to psychological stress or abilities and prerequisites for further personality development in the area of interests and hobbies. It is also important to identify problematic personality traits and behaviors, as well as the presence of addictive behaviors. Understanding criminal behavior itself is also important. The mentioned areas are necessary for the objective choice of the convict treatment program, where the goal, work methods and treatment method are defined. The plan also contains a description of various types of activities, which include work activities, educational and educatory activities, or hobby activities. Last but not least, the criteria for evaluating the success of the implemented activities and the frequency of the evaluation are listed here (compare Barták & Demjanenko, 2021).

Research in terms of our findings has shown that self-control has a significant effect on the behavior and reactions of convicted individuals. The majority of respondents demonstrated the ability to control their behavior, which may be a result of trying to get rewards for good behavior in the prison environment. The findings can therefore serve as a guide for professionals working with convicted persons and contribute to the creation of appropriate intervention strategies. In principle, it is possible to work with the development of the ability to self-control also within the framework of reintegration into society and prevention of recidivism.

Given the limitations of the research and the specific conditions of the prison environment, it should be taken into account that the results may be influenced by various factors. For example, we are fully aware that the research sample is highly gender inconsistent. Nevertheless, a more extensive research set would definitely contribute to a better understanding of the researched area. However, in our opinion, the research carried out brings important insight into the issue of social competence in persons serving a prison sentence and offers a direction for further research and practical application in the specific area of andragogic action.

Prisoners also vary by sex, age, length of incarceration and previous education. These are variables that can also affect the area of social competence. There are wide possibilities for further research here. The results of such research could subsequently create a comparative case study, representing the mentioned issue in its entire extensiveness. In that case, the results of our research can serve as a suitable basis for this more broadly focused research, but also advice in advance of possible problems related to the interpretation of the obtained data.

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Teacher's Soft Skills and Support of Students' Critical Thinking

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Abstracts:
The paper focuses on the soft skills of university teachers in connection with the support and development of students' critical thinking. The undergraduate training of future teachers is primarily concentrated on didactic-pedagogical competencies; the social-personality competencies of teachers remain in the background. The text emphasises the relationship between university teachers' soft skills and students' critical thinking. We outline strategies to develop and support students' critical thinking.

Key words:
soft skills, critical thinking, elements of critical thinking, critical thinking strategies, undergraduate training, soft skills attributes.

Introduction

An individual's undergraduate training must include the development of transferable competencies. One of these is the ability to think and reason critically. The role of the teacher is to prepare his/her students so that they can use the knowledge acquired in school effectively in social and professional life. According to Kosturkova & Ferencova (2019), the above implies the need to change the pedagogical mindset of students in their undergraduate preparation for the teaching profession. The primary outcome is for them to become thinking individuals. The fact above requires teachers to actively apply soft competencies and activating methods in teaching and engaging students in the education process.

Teacher's soft skills are challenging to quantify. Nevertheless, knowing that nothing can replace soft skills is vital. Students must learn these skills as early as possible, preferably in school. In today's education system, while it is difficult for students to directly encounter the opportunity to lead a team of people or creatively manage the learning process, the teacher should allow them to at least partially rehearse such tasks so that they can gain insight into how the skill is used and what it means.

1. Teacher soft skills

"Soft skills refer to a wide range of skills, competencies, behaviours, attitudes and personal qualities that enable people to manage their environment effectively, work well with others, perform well and achieve their goals.
These skills are broadly applicable and complementary to other skills - technical, occupational and academic" (Lippman, 2015, p.11). The preparation of teachers of vocational subjects is often provided primarily knowledge, skills in the form of hard competencies, they are not sufficiently guided to effectively solve problems in the process of learning, and therefore the emphasis on the development and promotion of soft skills of future teachers is extremely necessary and must be part of the educational process. If a teacher wants to work with soft skills he/she must immediately apply them in lectures, exercises, seminars.

According to Petlak (2023a), soft skills are not legitimized by a document, they cannot be quantified, they are perceived as certain personality traits, e.g. the ability to organize one's work, to be able to make decisions, to learn from self-reflection, to be able to cope in a difficult situation, etc. We stress that there is a link, a correlation between hard and soft skills. The former enable a person to do a certain job, the latter help a person to become successful in his job and in his field. While not so long ago we emphasised soft skills only as 4K - critical thinking, communication, cooperation and creativity, nowadays their number is enriching considerably. Just think of today's era in terms of, for example, human flexibility, environmental diversity, the ability to learn from

self-reflection, a willingness and interest in learning, self-education, appropriate and serious assertiveness, etc.

Transformation from a traditional school to a modern school active does not bypass undergraduate training. The traditional approach with its established and proven methods of managing and designing lectures, seminars, exercises is often assessed as unfashionable, ossified, backward-looking, unattractive and, above all, performance-oriented. Education as a performance-oriented process cannot be replaced, but attention must be focused on the appreciation of soft skills at work and in the teacher's approach such as:

- creativity,
- collaborative teamwork,
- emotional intelligence- empathy,
- work ethic, work style,
- social skills - communication skills, communication style,
- interpersonal skills,
- professional skills-leadership, leadership, work ethic, managing people, etc.

Teacher's soft skills impact students, not only motivating them to learn, but also being a great role model for students in their professional and private lives. In principle, it can be said that the acquisition of soft skills must permeate the whole educational process Petlak (2023b).

Hanisch (2021) recalls some possibilities for applying soft skills within education:

communication in the classroom - manage the educational process so that the teacher communicates as much as possible with the pupils and also the pupils with each other; communication not only promotes the development of cognition but also contributes significantly to emotionality (understanding the other, identifying with his/her perspectives, possibly also appropriate opposing, reassessing one's attitudes, etc.).

Persuasion and argumentation skills - it is an exchange of views, but at the same time, it is also about pursuing one's goal, correcting it, etc.; serious persuasion and argumentation also lead to strengthening relationships with partners.

Strengthening emotional intelligence - allowing pupils to have emotional experiences leads to learning about one's own emotions and other people's emotions and acting on those emotions.

Encourage pupils to perform frequently and present their work and opinions - pupils learn to perform, gain self-confidence, learn about their strengths and weaknesses, learn how to communicate, etc.

Teaching pupils teamwork and appropriate leadership - pupils learn not only to work together but also to perceive the differences between individuals, which leads to mutual support, help, and convergence to achieve the best possible results for the group.

Lead pupils to assertive behaviour - to teach pupils how to achieve change, win others over to a good cause, etc., by communication, examples, ideas, etc., to teach them that assertiveness is incompatible with conflict.

Teach pupils to resolve conflicts - in harmony or based on emotional intelligence so that when they encounter a conflict, they control themselves, assess the situation and use the best solution for themselves and the opponent.

Pay attention to critical thinking - to teach pupils to assess and evaluate different information based on the information and knowledge they have acquired so far, to compare them, etc.

Teach pupils how to work with information - to evaluate and sort information, resolve any ambiguities, and use it for future work.

Attributes of soft skills

It is important to recognise that soft skill attributes are pretty diverse, so an effort must be made to select and sort out relevant attributes that need to be developed and integrated into the educational process. The differentiation of soft skill attributes can be based on the needs of the

learners, the environment in which the education takes place, and the educational reality with which the learner is in contact. The study of soft skill attributes has been investigated by Spencer (1998), Ramesh (2010), and Sailah Illah (2008), for example. Amin et al. (2018) analysed soft skill attributes in their study. Soft skills' most relevant and general characteristics included discipline, cooperation, leadership and organisation, adaptability/flexibility, tolerance, friendliness, self-confidence, caring, and honesty. Of the general attributes, he specified four soft skill attributes:

1. oral communication;
2. written communication;
3. problem solving;
4. work duties.

According to the quoted author, the selected four groups of attributes are relevant for teachers of vocational subjects. In connection with the preparation of future teachers, we add specific soft skills such as:

- honesty (not cheating, copying texts),
- reliability (standing by one's word),
- courage (doing the right thing),
- maintaining a good reputation,
- tolerating differences,
- courtesy,
- ability to follow the rules,
- thinking openly,
- listening to others,
- responsibility for one's actions.

2. Teacher's soft skills and students' critical thinking

It is now evident that teaching cannot be limited to the imparting of scientific knowledge. However, part of effectively managed teaching is the development and promotion of competencies associated with students' critical thinking. Students' critical thinking can be identified as the ability to recognise meaningful connections, interpret data correctly, draw logical conclusions from available information, to distinguish between facts and conjectures, to evaluate the reliability of evidence to support claims and the credibility of authority, to reevaluate their own beliefs, and to make effective decisions and solve problems. In operationalising the concept of critical thinking, we find many definitions in the literature.

Klooster (2000) specified critical thinking by characterising five essential elements:

a) *critical thinking is independent,*
b) *the acquisition of information and working with it is the starting point, not the goal, of critical thinking,*
c) *critical thinking begins with questions and problems to be solved,*
d) *critical thinking needs sound arguments,*
e) *critical thinking is thinking in society.*

Teachers must use many teaching strategies in the educational process to stimulate discussion, dialogue, group work, etc.).

Critical thinking:

- is the art of analysing and evaluating thinking with the intention of improvement (Paul & Elder, 2010),
- it represents the mental processes, strategies and representations people use to solve problems. The ability to make decisions and learn new concepts (Sternberg, 2002),

- is a method of problems solving based on persuasive, logical and rational arguments, which includes verification, evaluation and selection of the correct answer to a given dilemma and reasoned rejection of alternative options (Ticusan et al., 2015),
- is deliberate, careful, intentional decision-making about accepting or rejecting a proposition?" Moore (1997).

A critical thinker can argue, reason and act appropriately Hand - Winstanley (2008).

3. Strategies to support students' critical thinking

In terms of education in a college setting, critical thinking can be understood as an activity. This tool leads students from inactive, superficial to deep learning to identify connections, understand the educational content conveyed, and draw conclusions. Brookfield (2012) argues that critical thinking can always be integrated into the teaching to some extent. According to him, it is important to explain to students why we do what we do, especially when the acquired skills and knowledge are to be applied in practice. Kozárová & Gunišová (2020) elaborated strategies to develop and promote critical thinking in university students. The cited authors differentiated the strategies into several areas. Promoting and developing students' critical thinking areas creates space for actively applying teachers' soft skills. Promoting and developing students' critical thinking in the educational process requires identifying educational strategies with an essential role for its stimulation.

Table 1: Strategies for developing students' critical thinking and teachers' soft skills

Strategies to promote and develop students' critical thinking skills	□	*Soft skills of a teacher*
strategies to develop self-regulation	□	ability to organise work
strategies for developing systematic and interpretive skills	□	ability to organise work ability to work together
strategies for developing reasoning	□	communication skills interpersonal skills
strategies for drawing conclusions and solving problems	□	creativity, professional skills - leadership, leadership, work ethic, people management
strategies for developing evaluation	□	emotional intelligence- empathy work ethic
strategies for developing reading skills	□	communication skills

Source: authors

The result of the teacher's influence on students and the promotion of students' critical thinking should be directed towards a student with developed critical thinking in the current educational process. A student with developed critical thinking can take in information, search for evidence, connect the knowledge gained, evaluate information, and formulate conclusions. Critical thinking includes logical reasoning, evaluation of what is written or spoken, thinking about individual ideas, and asking questions to clarify understanding. The primary goal is to create opportunities and encourage such thinking during discussions and mutual dialogues (Noruzi & Hernandez, 2010). In promoting and developing critical thinking, the teacher is required to create a space for students where they can develop self-confidence, evaluate their thoughts and opinions,

engage in the processes of learning and teaching, listen actively and respond appropriately to other views, and formulate and interpret their conclusions and judgments.

Paul & Elder (2002, p. 48) specified six stages of critical thinking and levels of thinking, which are tools for teachers to identify what stage students are in. Then, they can adapt tasks and strategies accordingly:

a) *Unreflective thinker* - the pupil does not realize the importance of thinking for life, does not have a developed ability to think, lack of self-control of thinking.
b) *Questioning thinker* - pupil can reflect on his/her faulty thought processes, can evaluate the correctness of a solution to a problem.
c) *Beginning thinker* - pupil is fully aware of his/her thinking, can identify strengths and weaknesses, can use critical thinking systematically and monitor his/her thought processes.
d) *Practical thinker* - the pupil is able to develop his/her thinking independently, high self-regulation of learning is encountered at this stage, he/she can form new conclusions, coherent concepts, looks for connections between information.
e) *Advanced thinker* - the pupil can analyse his/her own thinking, can orient himself/herself in problems on the basis of deeper levels of thinking. He/she regularly checks his/her thinking, evaluates it and streamlines it as needed. Intellectual stamina, integrity, empathy, as well as intellectual courage are developed.
f) *Accomplished thinker* - the learner develops his/her thinking regularly, uses a variety of strategies, and works effectively with all levels of thinking. He/she revises and systematically checks his/her thinking, uses critical thinking practically and interdisciplinarily.

Several authors emphasize the importance of critical thinking with an emphasis on its benefit for the student who possesses this ability. Cottrell (2011) defines benefit in terms of benefits such as: improving of attention and observation skills, more purposeful reading, improving of ability to identify key points of the text, improving of ability to analyze different situations. According to Theodoulides (2020, 2013), it is necessary to realize that thinking critically is a demanding process and represents the formation of a conscious meta-cognitive skill. Critical thinking is a term whose meaning is complex, and it is also based on a scientific approach to the world. It does not mean automatically criticizing phenomena, processes, ideas or theory. A critically thinking person does not automatically accept generally valid opinions and theories, but tries to compare the opinions of different authors and look for common features in them, ideas with which he would identify.

Conclusion

Current trends in education that focus on elements of constructivist teaching rely on many strategies, e.g., self-regulatory strategies, strategies that privilege the positive aspects of the learner, awareness of one's own shortcomings and limitations. Lack of developing critical thinking, not using argumentative strategies in the classroom is the fact that learners do not master argumentation, do not have their own opinion on a number of important topics, situations, as well as their communication skills are not sufficiently developed. As Kosturkova (2019) states, the school's vision for the future is a pupil who is life-oriented, can observe well, ask questions, evaluate, argue, systematize their knowledge, think independently and critically, etc. Critical thinking can be developed in every person. There is no precise age at which it is best to start developing critical thinking, as it is a constant and difficult to influence. Students need to be taught to think critically at all types and levels of schools.

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The use of alternative augmentative aids in the educational process of seniors

Andrea Franta

Abstracts:
What is necessary to focus on in an educational-social intervention to make it efficient for seniors? How to deal with seniors with communication difficulties due to a neurodegenerative disease such as dementia? Is it possible to involve these seniors in the educational process despite the various disabilities accompanying this disease? The paper presents a professional experience using an alternative and augmentative communication aid in seniors with dementia and describes its application in the educational process.

Key words:
Geragogy. Communication. Dementia. Self-realization. Acceptance. Compensation. Socialisation.

Introduction

What is more important to a person than the ability to speak independently? If we go back to childhood, even as babies, we tried to draw attention and express our feelings by crying. We did not know any other way at that moment. Crying was our channel of communication. As we developed and acquired the ability to communicate, speech became our communication source. The very idea that we should lose it is unimaginable to many. This gradual loss also happens to people with dementia. All their lives until the disease, they have expressed their needs verbally, and it must be emotionally draining to lose this source of autonomy.

Dementia is a disease characterised by its gradual and chronic course, bringing behavioural changes in three areas. In the area of activities of daily living, independence and the ability to carry out everyday activities are affected. In the behavioural area, neuropsychiatric symptoms accompany various disturbances, and the disease also significantly affects cognitive function. We talk about the deterioration in managing emotions, impaired social behaviour and personality changes. These changes significantly affect the lives of people with dementia, and they are reflected in their motivation or emotional experience (Holmer et al., 2014; Feil, Rubin, 2015). One of the changes that accompanies the disease most often, and whose mitigation and compensation we will discuss in more detail, is the impaired ability to verbalise.

From an intervention point of view, not only pharmacological but mainly non-pharmacological approaches are used when working with people with dementia. However, all of them are based on the ability to lead communication. These are mainly cognitive training or cognitive rehabilitation, reminiscence and others. Our paper focuses on a less-known educational and socialisation intervention, unique in social service institutions.

The helping staff in these facilities is in daily contact with disoriented seniors with dementia, whose communication skills are significantly reduced and impaired. Seniors are often confronted with a lack of understanding of their wishes and needs by the helping staff. How can this be changed? We recognise that training all staff using the Validation method would be unrealistic or even devastating for social care facilities. For this reason, we sought a more accessible yet effective way to meet the needs of seniors with dementia and the staff who assist them. This way is an alternative and augmentative communication aid.

1. Communication ability of seniors with dementia

Within the educational process, verbal communication is an essential pillar. However, how does the educational process work when a participant has difficulty communicating verbally due

to impaired communication skills? Due to the lack of information regarding professional communication methods with seniors with dementia, our orientation leads towards analysing the use of such an option to create a communication bridge between seniors with dementia and the accompanying educational process. Often, dementia as a neurodegenerative disease is considered a barrier to implementing an educational intervention.

Concerning language deficits caused by damage to cortical areas of the brain, the term aphasia is often used. However, it may not always be aphasia despite a communication deficit. In recent years, there have been changes in the perception of specific language deficits. Therefore, where clinical examinations of brain damage do not confirm aphasia but other cognitive-communication disorders, communication is still impaired. Cognitive-communication disorders are the interaction of cognitive functions with processes involved in communication (Body et Perkins, 2006; Kennedy et Deruyter, 1991, in: Marková, 2012). Until now, there has not been a sufficient investigation of manifestations of impaired communication in dementia. The orientation of existing research focuses on the sound (speech fluency, articulation of individual sounds and sound structure of words) and the lexical-semantic level of language or speech (categorisation of concepts, conceptual knowledge and definitions of words), as well as on linguistic processes at the word level (such as naming pictures and understanding words).

The manifestations of speech impairment correspond to types of dementia, e.g. in Alzheimer's disease and semantic dementia, semantic paraphasias predominate. Other research points to the presence of deficits at other levels of language processing, e.g., sentence or text level (Emery, 2000; Grossman, 2008; Pidrman, 2007; Preiss et al., 2006; in: Marková, 2012). Diagnosis of communication deficits or cognitive screening is made through one of the most widely used tests in practice, the MMSE by Folstein, 1975. The Czech version of Addenbrooke's Cognitive Test (Humelová, Fanfrdlová, 2009; in: Marková, 2012) maps language functions in people with dementia slightly more. There are also other tests used in practice.

For example, the MASTcz aphasia screening test compares aphasia rates in clients after stroke and in clients with Alzheimer's disease. According to research using this test, researchers have found that patients with dementia remain relatively intact or only mildly impaired in language and speech functions until the onset of the middle stage of the disease compared to stroke patients (Marková, 2012). It is crucial to note that sentence and text processes are more complex than word-level processes.

Therefore, they are more prone to deficits, which explains that while word-level processes remain preserved in people with dementia, processes at the level of sentences and texts are deficit and manifested by speech dysfunction in these people. Here, we see it as a challenge to develop responsive tools to support and facilitate communication for people with dementia. For communication techniques with these people, it is essential to distinguish the stage of dementia. If it is an early stage, the supportive communication technique is reminiscence. In the advanced stage, the validation technique, a technique with elements of resolution therapy, and the technique with elements of pretherapy are predominant (Klevetová, 2017).

Communication between seniors with dementia in residential care and staff has been a long-standing problem that has been detrimental to both residents and employees (Lubinski, 1978). Staff usually regard seniors in residential care as incapable and dependent on care. They often communicate with these seniors in a way that limits their chances for meaningful conversation, and they feel they are losing their communication ability. Care and nursing staff often misinterpret the disruptive or abusive behaviour of seniors with dementia. They do not realise that reacting inappropriately in such a situation only unwittingly reinforces care dependency in seniors. It is these dysfunctional patterns of interaction that not only put seniors with dementia at risk for a decreased quality of life but also increase the risk of developing burnout syndrome in employees (Chappell, Novak, 1992, Mor et al., 1995)

As mentioned above, communication is a crucial area not only in the quality of life of seniors with dementia but also in the field of dementia and its research. We can note that dementia

research is still not sufficiently explored, as this disease and its impact on personality bring significant qualitative differences and yet un-generalisable research findings. Artificial intelligence and machine learning approaches are now increasingly used in dementia research. However, from the perspective of researchers, several methodological issues may affect these findings and their introduction into the outcomes of work with people with dementia. For this reason, researchers should share and make available their well-documented findings as much as possible and use only interpretable methods to improve generalisability and reduce potential bias in the information. They should follow reporting guidelines and collaborate with other parties on findings. After overcoming the methodological challenges described above, great potential is attributed to the use of artificial intelligence and machine learning in the field of dementia (Bucholc et al., 2023).

With our scientific study, we want to support the dementia research community and bring results from clinical practice in using compensatory communication aids, such as alternative and augmentative communication, in the educational process of seniors with dementia.

2. Alternative and augmentative communication

In the broadest sense, it is possible to define alternative and augmentative communication (hereafter AAC) as any act through which one person gives or receives information from another person about his or her needs, desires, knowledge, and perceptions. Thus, this interventionist approach uses manual signs, communication boards with symbols and computerised devices to compensate for a person's communication abilities, whether existing speech, vocalisation, gestures, manual signs and communication boards or communication devices with voice output (Glennen, 2000). AAC is specific in its multimodality, which means that it allows each person with different kinds of verbal deficits to use every possible way of communicating messages or ideas (Romski, Ševčík, 2005). For this reason, AAC is usable for all seniors with different stages of dementia, as it can adapt to their preserved abilities.

AAC offers vital compensatory support to people with dementia to maintain their quality of life and well-being through participation with others. It is crucial to note that, to date, no research has been conducted or published on the use of AAC in the field of dementia.

However, AAC has a long tradition worldwide, and it came to us only a few years later. In that period, all non-speaking persons were automatically perceived with a present disability that did not allow them to communicate. Klenková (2006, p. 206) states, *„AAC aims to enable an individual with severe communication impairments to communicate actively and to participate in society.“* From the 1980s until today, multiple hardware and software options available to a person with verbal dysfunction who uses AAC have been developed, including voice output options (Romski, Ševčík, 2005).

Thus, the primary focus of AAC is to help individuals who have impaired communication skills by working to increase their participation in activities, which creates opportunities for social interaction in their environment. People with severe oral motor and expressive language disorders mainly use AAC, but it also finds its application in persons with dementia, even in the late stages of the disease (Bourgeois, Fried-Oken, Rowlandová, 2010).

In the early stages of dementia, it is possible to use conventional technologies as memory support. For example, a mobile phone can be a support device for dialling familiar numbers. In a calendar, they can keep track of appointments and medical appointments or program a medication schedule. These strategies are likely successful if implemented during the initial phase of memory loss. Thus, if someone has been using a mobile phone, they may continue to use it with only minor modifications, i.e., larger buttons or the ability to dial from memory (Bourgeois, Fried-Oken, Rowlandová, 2010).

A review of current AAC strategies and techniques used to support communication in dementia revealed that most research has focused on supporting the interactions of people with dementia primarily through non-electronic memory and communication aids. Thus, future

research directions should focus on person-centred communication and social participation for the use of AAC, with the target of further research being training programmes aimed at dyadic interaction and support for people with dementia from different ethnic backgrounds (May, Dada, Murrayová, 2019).

An international study illustrating the application of AAC in a residential care setting examined the impact of AAC aids on conversations between seniors with dementia and staff to bring into focus the seriousness of the communicative competence of seniors with dementia and to influence and change the communicative interactions between them and nursing and care staff. These were 5-minute interviews in seven senior care facilities, with seniors randomly assigned to the experiment. It is possible to see the impact of using AAC aids designed to compensate for the gradually deteriorating language and cognitive skills of seniors with dementia in the strengthening and improving social interactions between seniors and between seniors and staff.

These graphic and written aids, i.e. memory books, serve as compensation in terms of linguistics, providing semantic content in the form of sentences, words, and pictures. They also serve as external storage, storing information for a long time, i.e. replacing memory. The study experimented with a group that used the AAC aid and a group that did not. The group that used AAC got twelve-page memory books that contained autobiographical information, information regarding the course of the day or information about problem-solving. The staff caring for and treating seniors in the experimental group were trained to use the AAC device as part of their care during the day. They took measurements before and after a period of AAC use. There was an evident improvement in conversational and intervention skills in the group that used the memory books.

These were improvements in conversation duration and also fulfilled the hypotheses that the seniors with the AAC aid would increase the number of utterances during conversations. Interestingly, a finding that emerged from the study was that seniors in the experimental group used more utterances in interviews even though their speaking time was reduced. The control group of seniors who did not use the AAC aid verbalised less and used fewer utterances. The study attributes this difference to the presence of the memory book, which provided the seniors with printed sentences and generated new and related utterances in less time. There is also the advantage that AAC aids provide specific content for staff to comment on, increasing the opportunity to talk with seniors with dementia (Bourgeois et al., 2001).

Staff interacting with seniors without using AAC aids seemed dominant in the interview. Their effort was to fill the silence by talking. Their conversation acted as a monologue to encourage seniors to be more communicative. However, nursing and caregiving staff sometimes need to provide instructions to maintain an appropriate mode of stimulation (Bourgeois, Fried-Oken, Rowlandová, 2010). Therefore, the prompting mentioned above proved to have a negative impact on conversational interactions between seniors and caregiving and nursing staff. On the contrary, in the experimental group, using a memorisation aid contributed to a change in the quality of residential life by improving information sharing between seniors with dementia and staff. It positively promoted social closeness (Bourgeois et al., 2001).

3. Implementation and use of alternative and augmentative communication aids in the educational process of seniors with dementia

This paper aims to bring insights and experience from implementing AAC with people with dementia as part of the educational process in our chosen specialist social care facility. We selected two seniors with advanced dementia for the implementation process.

In a standard AAC assessment, the focus is directed toward the communication environment to identify barriers that interact with the communication needs and abilities of the senior (Beukelman, Mirenda, 2005). For this reason, we first focused our attention on analysing the communication environment of the seniors we selected. The communicative environment of which the seniors are a part did not sufficiently provide them with opportunities to maintain and

develop their communicative and cognitive abilities, which decrease with the progression of the disease. With the observations carried out during one month of activity in a specialised facility, we identified the barriers affecting the communication needs or abilities of the seniors.

First and foremost, it was about the insufficient time of the caregiving and nursing staff while implementing the senior's care tasks. The staff did not have time for social interaction with these seniors with dementia, whose psychomotor and cognitive abilities are impaired. As mentioned in the reported study, the staff reacted dominantly in the interaction with the seniors, and they filled the prevailing silence by trying to lead the dialogue by asking questions that the seniors with advanced dementia could not answer or that made them unsure and caused their doubts and emotional instability. The seniors' disruptive behaviour often manifested emotional distress, and the staff failed to identify their needs.

Another barrier observed was the lack of educational background of the care staff. The employees were not sufficiently trained and did not know the ways and specific features of communicating with a person with dementia, i.e., they did not know their communication needs.

We observed the communication skills of our selected seniors during regular educational interventions that took place twice a week. We performed an initial diagnosis of communication deficits or cognitive screening using the most widely used tests in MMSE practice. During the educational intervention, the seniors we selected responded to the prompts with one-word answers, and sometimes, they did not respond at all. They could not find the right words or did not understand the content of the question. During the group educational interventions, social interaction was relatively passive. For scientific study purposes, we recorded individual sessions and used these recordings in the evaluation phase and in interpreting the findings.

After one month of observation and analysis of communication skills, we initiated the implementation phase of AAC in the form of a memory book as part of the educational process. First, it involved providing AAC aid tablets and purchasing and installing the application. The app provided options to adapt to the senior's abilities. It was about challenging pictograms, phrases, and sentences that created a communication bridge for the seniors, providing an opportunity for independent engagement during the educational interventions. In this case, the communication bridge consisted of pictograms and phrases that were brief, concise and close to their cognition. Also, the memory book contained a weekly schedule of activities in daily reports.

Our selected seniors did not often attend the educational programme on their own because they forgot. The AAC aid contained options that alerted the seniors to what was happening in the facility where they lived, increasing their participation in social events and their quality of life. Similarly, it is possible to use the AAC aid to meet various needs, from alerting the seniors when it is time to take their medication to hygiene and other needs.

In the next phase, the implementation involved the care staff in daily contact with the senior. Due to staff duties, we trained all care employees of the selected seniors to use the AAK device. We explained to the staff how to communicate with the person with dementia. Knowing the seniors' biographies was helpful, which reduced the risk of inappropriate communication content or aimlessly filling in the silence during caregiving tasks.

The MMSE post-test and three-month observation of using the AAC aids demonstrated an increased level of seniors' engagement during the educational programme. Initially, we needed to educate and guide the selected seniors while becoming familiar with the app. After the training and three months, it was possible to observe more frequent engagement of seniors with dementia and speech dysfunction in conversations using the AAC aid. This awakened ability strengthened the seniors' sense of independence and self-sufficiency, showing them they could still do something. From a validation point of view, we are talking about fulfilling one of several needs of a person. At the same time, staff relationships towards seniors using AAC aids have improved. The interaction deepened their mutual relationships and improved the staff's perception of sometimes even bizarre behaviour of seniors with dementia and vice versa.

Conclusion

The scientific study provided a comprehensive insight into the current issues of people with dementia, with the aim of not only contributing to the little-studied scientific community of dementia but also presenting a proven use of one of the compensatory options for the changes brought about by this disease. The positive action of the AAC aids in the educational process and brings the possibility of maintaining social participation for seniors with dementia.

Currently, they implement the proven positive impacts of AAC aids throughout the specialised facility, and the level of application is adapted to seniors in the advanced stage of dementia, making life easier not only for seniors but also for staff who better understand dementia using the AAC aids.

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Electronic education and digital competences of the attorneys

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Abstracts:
The importance of digital competences of attorneys will continue to grow in the context of the computerisation and digitalisation of public administration. The further professional education of attorneys needs to respond to the current challenges and its form needs to be adapted accordingly. The digital transformation of education and distance learning are important factors that can contribute to the training of attorneys in digital competences.

Key words:
artificial intelligence, attorney, digital competence, electronic education, further professional education

Introduction

The impact of technology on the current working and economic environment is undeniable, and we can expect a similar dynamic in the near future. While the digitalisation and computerisation of the public sector is gradually being adopted by individual countries, the private sector is much more flexible and responsive. In the service sector, there are few professions that have not been affected by the introduction of modern technologies and therefore do not need to adapt. The legal profession is not one of them. The professional provision of legal services is considered to be a rather conservative sector, but the use of modern technology is no longer on the periphery of attorneys' concerns.

Attorneys are often cited as one of the professions that could be threatened by the emergence of artificial intelligence and related technologies. It is therefore essential that attorneys have appropriate digital competences or acquire and develop them in a timely and adequate manner. It is expected that the mastery of digital skills will increase the value of attorneys in the market for services. There is a perception that with the development of technology, there will be no need for attorneys as legal services will be secured by improved technology (Dyane, 2021, p. 208).

It can be assumed that all attorneys will benefit from the use of digital technologies. Barczentewicz (2021, p. 2) describes that we can talk about 3 kinds of lawyers: those who will be technologically literate at a basic level, which in itself represents a qualitative change; those who will have more insight into the functioning of digital technologies and be able to use them effectively; and those who will use digital tools at an advanced level and further develop their application possibilities (technology expert attorneys).

All this creates a space to study and explore the possibilities of further professional education for attorneys in the field of digital literacy. Last but not least, technological progress may lead to the creation of entirely new professional roles in the legal profession that specialise in working with technology – legal technologists, legal data scientists, legal process analysts and others (Bullows, 2021, p. 259).

In this paper, I will focus on the digital competences of attorneys, a description of current trends in the field of digitalisation that have an impact on the legal profession, and I will also present research results from a survey of attorneys in the Czech Republic on their views of digital competences.

1. Digital competences of attorneys

Competence is a lifelong learning concept defined by Veteška & Tureckiová (2020) as the unique ability of an individual to act successfully and develop his/her potential. The Council of

the European Union Recommendation of 2018 describes competences as a combination of knowledge, skills and attitudes.

Digital competence is one of the components that make up the concept of competence in general. The knowledge of digital competence promotes the use of new ways of communication, the development of creativity, the willingness to use current technological innovations, and at the same time, the awareness of the risks and threats that modern technologies can bring. According to Černý (2019), a digitally competent person is one who "can use technology safely to solve problems, work critically with information, and create digital content themselves to share with others".

The issue of digital competences is widely addressed by the European Union, which elaborates its recommendations and publishes, through the EU Science Hub of the European Commission, the European Framework of Digital Competences for Citizens, also known as DigComp in its current version 2.2 of March 2022 (Vuorikari, Kluzer & Punie, 2022).

Digital competence is one of the core professional competences of attorneys, alongside legal knowledge and legal skills. Attorneys' digital competences can be found in the following areas:

- information and data literacy;
- digital communication;
- use of digital technologies;
- information security;
- digital content creation.

Incorporating digital competence education and training into the curriculum of higher legal education is one of the prerequisites for the full development of these skills in the future. Research by Martzoukou, Kostagiolas, Lavranos, Lauterbach & Fulton (2022) among law students found that students perceive themselves as moderately competent in digital technologies. It is imperative to lay the foundations for digital competence in higher education.

Dyane (2021, p. 222) describes the main reasons for this as being:
a) a curriculum filled with subjects that form the core of study,
b) universities' reliance on digital competences to be acquired through practice
c) a general reluctance to teach technology-oriented subjects within humanities courses.

In addition, the introduction of specialised digital competence courses for practising attorneys from the bar association level could also be considered. Barczentewicz (2021) points out that it is important for technology-oriented courses to focus on smaller but very specific technological areas (e.g. use of analytical and search tools, basics of cybersecurity) that are applicable in practice.

2. Technological challenges in the legal profession

The development of technological possibilities is currently exponential, yet we are still in the early stages of the technological revolution. It is extremely difficult to accurately predict the technological direction in which to invest time and energy. The main technological challenges facing attorneys today include:

- the introduction of artificial intelligence and other forms of machine learning and work automation;
- cyber and information security;
- computerisation and digitisation of state administration.

Artificial intelligence is often seen as the main face of the digital and technological revolution. The truth is that it is only one tool. Related machine learning technologies, e-discovery techniques, big data processing, tools for automating routine activities, etc. also play an important role. The benefit of these technologies is that they increase the efficiency and productivity of the attorney (Kursch & Veteška, 2021). It is not necessary for an attorney to perform typical activities without

added value, as these activities can be replaced by technology (researching court decisions, literature, drafting simple legal documents and submissions, creating presentations, charts and reports, etc.).

According to Wang (2019, p. 66), reviewing five legal documents (five non-disclosure agreements) took an attorney (research sample of 20 attorneys) an average of 92 minutes, while AI took 26 seconds, showing a higher success rate. Much of the promise of artificial intelligence lies in its predictive capabilities, in the sense of being able to predict outcomes, such as court decisions, based on analysis of similar cases. This is a capability that AI possesses, but currently does not yet show a success rate that can be applied in practice (Bell & Legg, 2019).

This allows the attorney to focus on other atypical activities that require creativity and original thinking. For a detailed description of the potential uses of AI, see, for example, Ajevski, Barker, Gilbert, Hardie & Ryan (2023). Significantly, the use of AI by attorneys is not out of the question. The Czech Bar Association states in its opinion of September 2023 that attorneys can use AI tools. However, artificial intelligence as such cannot be the provider of legal services, which is always the attorney. The attorney bears the ultimate responsibility for the use of AI tools, and the Bar Association draws attention to the duty of confidentiality (attorney-client privilege) and the protection of the client's personal data. The Council of European Bar Associations (2022) also provides detailed guidance on the use of AI, including its potential uses and risks.

In the course of their work, attorneys collect large amounts of confidential information and personal data, which they have a duty to protect and safeguard. As this data is processed and stored electronically (not only locally but also in virtual cloud storage), it is essential that the attorney is aware of cybersecurity issues. Cyber attacks are not uncommon these days, and attorneys can be convenient and easy targets for illegal activities of this nature (Wald, 2016).

Attorneys' uncoordinated and uninformed use of technology can lead to greater vulnerability of the data they work with. Cybersecurity is closely related to the protection of personal data, to which attorneys are bound by the GDPR. Therefore, it seems only natural that attorneys should be educated on the importance of security measures, such as encryption of communications and content, threat and risk analysis, and storage and backup of content. In the US, there are a number of individual bar association opinions on cybersecurity issues (e.g. confidentiality of e-mail communications, communication in social networks, creation of electronic files, use of cloud computing, etc.), which make it much easier for attorneys to operate in the technological field (Trammell, 2020). The Czech Bar Association rarely comments on technological aspects of the legal profession.

As mentioned in the introduction, states and public administrations are also moving towards digitalisation and computerisation. In the Czech Republic, this is particularly evident in the creation of central registers and databases (Commercial Register, Real Estate Register, Business Register), remotely accessible and machine-processable information (Open Data Project), public administration portals (Citizen Portal, Electronic Tax Office), electronic identification devices (eObčanka), and the establishment of various forms of communication between the state and individuals (Data Mail Service). By the very nature of their profession, attorneys must actively respond and adapt to these public administration activities in order to provide their clients with the highest quality and most cost-effective services. Attorneys are also often subject to a number of obligations in this area (e.g. the obligation to set up a data mail service). Navigating and competently managing these computerisation projects therefore requires additional energy and time from attorneys.

3. Digitalisation of further professional education of attorneys

In addition to the impact of technology on the practice of law itself, technological advances also affect the way in which attorneys are trained. Further professional education for attorneys in the Czech Republic is not compulsory and, unlike in many other European countries and the USA, is on a voluntary basis. Educational activities are mainly provided by the Bar Association,

universities or other non-formal educational institutions available to attorneys. In the context of the pandemic, there has been a boom in distance learning, e-learning activities, webinars and other methods that combine face-to-face and distance learning.

Data from the Academy of European Law's survey on online training in the legal professions (2020) shows that up to 70 % of European attorneys have used online learning activities, the highest of any legal profession. In the area of distance legal education, Storr & McGrath (2023) conducted a scoping review to identify the most commonly used digital methods in legal education between 2010 and 2020. The most commonly used distance learning methods were mainly online education (online discussions, blended learning), flipped classroom, virtual reality or gamification. Research shows that participants in such learning activities have better learning outcomes, a better understanding of the subject and a higher level of engagement in the learning process. On the basis of these findings, it is therefore reasonable to assume that distance learning methods, if used appropriately, can be a very effective educational tool.

Although distance learning has many advantages, the face-to-face form of further professional education of attorneys is dominant in the Czech Republic. The Czech Bar Association has repeatedly stated that the complementary nature of distance education will remain, as the advantages of face-to-face education outweigh its disadvantages (networking, higher level of interaction). Nevertheless, the Bar Association organises a number of online seminars for attorneys. In the area of computerisation, the archaic model of the written part of the bar exams has also been replaced and from 2022 candidates will be able to take these exams using computer technology.

In contrast, an example can be found in Ireland, where the local bar association favours technologically advanced methods of continuing legal education for attorneys. In addition to well-known learning platforms such as Moodle, Irish attorneys also use mobile learning apps. Law society of Ireland also uses the flipped classroom method of education, where attorneys are given the opportunity to study a topic in advance and then spend time in the classroom discussing and debating it. The transition to digital learning, or at least to a form of blended learning, requires a comprehensive change in thinking about the design of education, not just a technical change in its format (European Commission, 2023).

4. Research on digital competences of attorneys in the Czech Republic

The qualitative research method was used to determine the relationship of Czech attorneys to digital competences and the way they are applied in legal practice. A total of 11 attorneys were contacted in 2023 and provided their opinions through a questionnaire and in-depth interviews.

Respondents agreed that mastering digital competences is crucial for success in the competitive environment of the legal profession. Respondents rate their digital skills as sufficient. They consider it essential to work with legal information systems and software products such as MS Office. Respondents feel using electronic signatures on documents and communicating by email or data mailbox to be quite natural. None of the respondents use artificial intelligence in their professional practice, but there is a consensus that it will be a useful feature in the future to make work easier. One respondent mentioned that the use of an electronic file management tool had increased his team's efficiency by 5-7 %. On the other hand, respondents also cited examples of conservative attorneys (usually of the older generation) who reject technology and leave these activities to administrative staff. Respondents recognise that digital competences can be acquired quickly and flexibly, which is an advantage in view of their dynamic development.

5. Discussion

Despite the initial reluctance of attorneys to use modern technology, it is clear that a clear position on its use is needed. This is gradually taking place, with states and bar associations formulating initial rules of application and positions. Other actors in the justice system – courts, prosecutors, notaries and others – face similar technological challenges. Attorneys don´t have tied

hands in this respect, as they operate independently and are not bound by public administration decisions on computerisation and digitalisation.

The legal profession will have to respond and adapt to current social and technological developments. This is also closely linked to the educational process. Students should already be familiar with the impact of technology on the legal environment during their formal university studies. At the same time, the question arises as to whether attorneys should receive training in digital literacy as part of their continuing professional education. In the US, the requirement for digital (technological) competence is directly incorporated into the ABA Rules of Ethical Conduct, which state that a lawyer should be aware of the risks and benefits of technology (Rosenof, 2022).

This is then translated into the systematics of further professional education for attorneys in the US (Browning, 2019). Attorneys in US states (e.g. Georgia) where these requirements have not yet been translated into practice are calling loudly for this (Webb, 2023). Unfortunately, these debates are not taking place in the Czech Republic. As there is no mandatory further professional education for attorneys, it is foolish to think that it should be otherwise in relation to digital competences. However, the truth is that technology will increasingly interfere with the legal profession and it is up to each individual to decide what approach to take. In this respect, the topic of digital competences of attorneys in the Czech Republic is a suitable topic for further research, as it is topical and the possibilities of its development can be well compared with foreign models.

Conclusion

Attorneys' digital competences and their acquisition and development is a topic that has been resonating in the legal community for a number of years. A quality attorney can be recognised by the fact that he or she has expertise not only in his or her field of specialisation, but also in other fields. One of these areas is undoubtedly technology, which has developed at a rapid pace in recent years. It is therefore the role of education to contribute to the dissemination of awareness of the benefits and risks of technology, as well as the benefits for the practice of law.

At present, it is impossible to predict with any certainty which technologies will prevail in the practice of law, to what extent, and whether this will mean a significant change from the client's perspective. Ideally, technological progress could lead to cheaper legal services and access to a wider range of clients. As the judiciary will also have to respond to these trends, this could ultimately mean more efficient court proceedings, but also greater transparency and predictability of court decisions. It will undoubtedly be interesting to continue to monitor the development of technological trends in the legal profession and the ability of all stakeholders to adapt to these changes.

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Vocational Subject Teacher Training in the Context of the Digital Transformation of the Economy and Artificial Intelligence

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Abstracts:
The present study is an output of KEGA grant project No. 001VŠDTI-4/2022 Teacher Training in Vocational Subjects in Accordance with the Requirements of Twin Transition Green and Digital. Pre-service and in-service training of vocational subject teachers is undoubtedly influenced by the digital transformation of the economy – as well as other factors including global megatrends – which must be reflected in the updated set of innovative (vocational subject) teachers' competencies.

Key words:
teacher, education, lifelong learning, vocational subject teachers, teachers' competencies, digital transformation of the economy

Introduction

The present study is an output of KEGA grant project No. 001VŠDTI-4/2022 Teacher Training in Vocational Subjects in Accordance with the Requirements of Twin Transition Green and Digital (Bilčík, 2022a,b). Vocational subject teacher training is significantly impacted by the digital transformation of the economy not only in relation to the updated set of teacher competencies (see also Veteška, 2017; Veteška, 2013; Veteška & Tureckiová, 2020, Vochozka et al., 2023a,b, Arfandi et al. 2023, Freitas, Guimarães & de Menezes, 2019, Huynh, 2021 etc.).

As Gabrhelová et al. (2023) claim, under the impact of the twin transition green and digital, the European Union's transformation towards a circular, digital, and climate neutral economy, which uses resources effectively and takes advantage of artificial intelligence (AI) can be expected (see also Banihashemi et al., 2024, Shostak et al., 2023, Brzozowska, M. et al., 2022 or Oliveira & de Souza, 2022). Undoubtedly, school systems should take measures as a reaction to the new situation and innovations in the field of using AI and ensure the educational content's adaptation for all levels of education, as well as for both pre-service and in-service teacher training programmes.

1. Digital transformation of the economy

The 2030 Digital Transformation Strategy for Slovakia, as well as the Action Plan for the Dgital Transformation of Slovakia for 2019 – 2022 (2019), is a national framework, a government strategy defining the policy and particular priorities of the Slovak Republic in the context of the undergoing digital transformation of the economy and society under the impact of innovative technologies and global megatrends in the digital era. Digital transformation primarily brings social – and not only technological – challenges concerning all citizens of the Slovak Republic.

Digital technologies must be used for increasing the citizens' quality of life and for optimizing processes to ensure the country's economic, social and environmental growth with an accent placed on sustainable development (see also Horváth, 2021; Horváth et al., 2021; Dušek, 2019, 2021; Treľová & Hlásny, 2023a,b; Treľová, 2021; Hlásny, 2022, Hlásny, 2023, Treľová, Kačmariková & Hlásny, 2023). That is why the country's strategic goal is to apply a conceptual approach to the process of the economy's and society's digitalization, as well as the principle of collaboration between sectors with the aim to make a significant progress in the process. The aim is that Slovakia becomes a modern country with an innovative and ecological economy by the year 2030, taking advantage of knowledge, digital, and data economy, with effective public

administration ensuring an intelligent use of the country's territory and infrastructure, and with and information society, in which the citizens take full advantage of their potentials, and live high quality and safe lives in the digital era. Slovakia possesses all the important economic, geographic, and human potentials for meeting this vision, but it must be pointed out that the capacities, options, and resources for the implementation of this undoubtedly demanding process are limited. Therefore, in the context of the digital transformation of Slovakia, a thoughtful, systematic approach must be applied. Based on the above, the following preconditions or resources for digital transformation of the economy and society were identified: Human resources (qualified workforce able to take advantage of the opportunities offered by the digital era), Infrastructure (a set of necessary technologies, solutions, and systems), and Regulatory framework (a framework for defining legislative norms and the way of functioning).

Based on the current situation in Slovakia, the following areas – in which the country needs to and can improve by means of digital transformation – were identified: Economy; Society and education; Public administration; Regional development; and Science, research and innovations. So, it is evident that in the context of digital transformation and using AI, also adult education has an important role to play in this system.

Both the 2030 Digital Transformation Strategy for Slovakia and the Action Plan for the Digital Transformation of Slovakia for 2019 – 2022 (2019) accentuate that the process of digital transformation in the country should be understood in an even broader context as part of a complex process of building an information society for the 21st century. In compliance with the above, the conceptual goal of the process of digital transformation and building and information society is creating conditions for a satisfying and dignified life for every individual in the digital era respecting the principles of digital humanism also in the context of using AI.

In a short-time horizon, the following recommended priority fields, forming the basis for the Action Plan for the Digital Transformation of Slovakia for 2019 – 2022 (2019) were identified: 1. Digital transformation of schools and education to improve the quality and preconditions for employment, and acquisition of digital skills and competences necessary for the digital era; 2. Establishing the basis for modern data and digital economy and digital transformation of the economy; 3. Improving the abilities of the public administration to innovate and use data in favour of citizens, and 4. Supporting the development of artificial intelligence. It is evident that the digital transformation of schools and education is a long-term priority of social and professional interest.

The Action Plan for the Digital Transformation of Slovakia for 2023 – 2026 directly follows on from the 2030 Digital Transformation Strategy for Slovakia and from the Action Plan for the Digital Transformation of Slovakia for 2019 – 2022. Its main goal is to eliminate the barriers to a beneficial and responsible implementation of digital innovations into practice in priority fields and to create preconditions for further development. The Action Plan for the Digital Transformation of Slovakia for 2023 – 2026 is divided into four thematic fields covering the key areas – 1. digitalization of broader economy; 2. building digital infrastructure; 3. promoting the potentials of artificial intelligence; and 4. creating a digital society.

Building digital infrastructure means ensuring gigabit connection for households and SED (structured electronic documents for schools, institutions, and offices). One among the strategic goals is education and competence development in HPC (high-performance computing), which can be implemented into practice by designing and carrying out educational HPC courses and workshops and providing educational opportunities focused on various fields, especially advanced simulations, extensive data analysis, AI, and machine learning. Attention needs to be paid to the application of HPC in the commercial sector and in public and state administration. The courses can be carried out in collaboration with European centres for digital innovations. Alongside with that, it is necessary to update several strategic documents – e.g. the Programme for Informatization of Education with the Outlook Until 2030 containing the standards for schools' digital equipment. In accordance with the new legislation in force on electronic communication and building legislation, it is important to eliminate the persisting difficulties in practice creating barriers to a

more effective development of high-speed communication networks, as pointed out in the Action Plan for the Digital Transformation of Slovakia for 2023 – 2026.

2. Vocational subject teacher training in the context of the requirements of the digital transformation of the economy and artificial intelligence

Another document is the Slovak national integrated reform plan Modern and Successful Slovakia (2020) declaring that the digital transformation of education and administrative processes in primary and secondary schools is based on the following three principles:

1) Developing teachers' digital skills;
2) Equipping teachers with digital technologies (software and hardware); and
3) Introducing a curriculum reform strengthening horizontal digital skills and focusing on the field of digital education.

Developing teachers' digital skills by means of in-service teacher training programmes is one of the preconditions for successful implementation of a reform in the discussed field. As envisioned, the process of digital transformation in schools will be managed by digital coordinators, and teacher training will by carried out using the "train the trainer" system in the framework of which individual schools' teachers will get prepared for meeting the goals of the digital transformation plan in a particular school. Based on this plan, equipping teachers with digital technologies will be ensured, the quality of Internet connection will be increased, and localized digital content with an open licence will be available to students and teachers through virtual educational environments.

Each teacher will be equipped with a laptop with a secure network system and an e-mail address managed by the school and their access to virtual educational environments will be ensured. Teams of teachers will be able collaborate and communicate through digital technologies, and students' personal data and information will be safely stored. Application of digital technologies will make administrative processes in schools easier. Each student will have access to open digital educational contents and in schools, digital technologies will be used to increase the quality of teaching and learning in the classroom. In the case of crisis situations – e.g. pandemics – schools will be able to transform their processes and provide online support to their students without any delay. Curricula will promote developing digital skills, e.g. programming or understanding how to use technologies safely with an accent placed on social aspects, such as specific skills in the field of working with robots and autonomous technological devices. Here, new space for updating the focus and content of vocational subject teachers' (lifelong) learning activities opens with the aim to provide teachers with opportunities to develop their skills and competencies necessary for every individual's involvement in digital transformation and they will be able to transfer these skills to their students in schools (Modern and Successful Slovakia, 2020).

Treľová et al. (2023b) claim that one of the goals of education at all levels of schools is overall personality development, building a culture of relationships, but also developing students' ability to learn, to abstract problems, intentionally acquire knowledge, as well as to find orientation in extensive digital world data. From this aspect, in the near future, university graduates will need to be very well prepared not only professionally and have solid knowledge in their fields of interest, but also well equipped with a set of competencies for both the digital and the human world (see also Treľová, 2021). This will help universities fulfil their mission, which is to ensure their students' harmonious personality development. Universities are irreplaceable in this context, since primary and secondary education has completely different attributes than university education, but it must be pointed out that even at lower levels of education it is necessary to put emphasis on promoting activities targeted on ensuring a complex, balanced, and healthy personal development. As experience shows in relation to the work conditions in the digital era and in the context of a more and more frequent usage of AI, suddenly, new forms of employment associated with rapid digital development occurred and in tertiary education, we have reached the point when higher educational institutions must apply a more consistent approach to preparing their

students/graduates especially in the field of soft skills (National Soft Skills Association, 2022, as cited in Treľová et al., 2023b) that cannot be supplemented by AI. A result of a research study carried out by Harvard University, Carnegie Foundation, and Stanford Research Institute show that 85% of all professional successes are achieved thanks to developed soft and human skill and only in 15% of all reported cases can technical skills and knowledge (hard skills) be considered decisive.

These statistics were presented in A Study of Engineering Education by Charles Riborg Mann published by Carnegie Foundation in 1918 (National Soft Skills Association, 2022, as cited in Treľová et al., 2023b). So, it has been clear for almost one hundred years that soft skills are decisive from the aspect of success in any organization. If soft skills are six times more important in the labour market than hard skills, the question why institutions of tertiary education still pay more attention to hard skills compared with soft skills arises. As it can be found on Platy.sk (2021; as cited in Treľová at al., 2023b) the results of a questionnaire survey by Profesia indicate that only four from among the fifteen most frequently required skills on the labour market can be categorized as hard skills – knowledge of foreign languages, work experience, analytical thinking, and good knowledge of MS Office. Other required skills include communication, teamwork, resilience, ability to flexibly adapt to changes, or application of a pro-customer approach – these can be categorized as soft skills, which is another argument in favour of adjusting the content, organizational forms and goals of education and vocational training in tertiary education (Vochozka et al., 2023a,b; see also Tuchyn et al., 2022, Lysenko, 2022, Chovriy, 2022).

As found out by Jakabová (2023) by means of semi-structured interviews carried out with vocational subject teachers in secondary schools, the respondents paid increased attention to digital competencies, which they consider important for the modern era in the context of AI development. Although the participants are aware of the significance of modern technologies' implementation in the educational process, several among them admit that despite their experiences with using digital technologies in practice (e.g. in the context of distance teaching during the pandemics, but also for the purposes of on-site teaching under standard circumstances), they have doubts regarding their abilities and do not feel sufficiently equipped with the required and necessary competencies in the field. Jakabová (2023) also positively evaluates the fact that the participating teachers do not consider digital technologies and especially AI a panacea, they perceive them as a tool for increasing the efficiency of education and increasing students' motivation by making educational content appealing to them.

Conclusion

The present study is an output of KEGA grant project No. 001VŠDTI-4/2022 Teacher Training in Vocational Subjects in Accordance with the Requirements of Twin Transition Green and Digital. As the literature review and presented data show, both pre-service and in-service vocational subject teacher training programmes will be more and more influenced by IA and digitalization, as well as the digital transformation of the economy in relation to the set of updated (not only vocational school) teachers' competences in practice.

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