Proceedings of the 10th International Adult Education Conference

16 December 2020

Prague, Czech Republic

Vzdělávání dospělých 2020
– reflexe, realita a potenciál virtuálního světa

Adult Education 2020
– Reflection, Reality and Potential of the Virtual World

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Praha / Prague

2021

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A Message from the Editor in Chief

Dear Colleagues,

We are very pleased to publish your paper in this book of proceedings. This issue covers the papers presented at the 10th International Adult Education Conference – Reflection, Reality and Potential of the Virtual World (IAEC 2020), held on 16th December 2020 in Prague, Czech Republic. This year was different compared to previous years, the meeting and presentation of individual papers was virtual.

The conference was traditionally organized by Czech Andragogy Society in main cooperation with Charles University in Prague. We have been working with Pedagogical University of Cracow (Poland), Matej Bel University in Banská Bystrica (Slovakia), University of Warsaw (Poland) and Jan Evangelista Purkyně University in Ústí nad Labem (Czech Republic).

Charles University is the oldest university in Central Europe. The university traditionally supports and implements excellent science in the field of humanities and other sciences. The Czech Andragogy Society is the largest professional organization in the Czech Republic, dealing with the development and research in adult learning and education.

The ongoing pandemic of covid-19 was fundamentally reflected in the thematic focus of the 10th year. Therefore, most contributions reflect current education issues.

The content of the book of proceedings thematically corresponds with the main topics of the conference:
- What has the pandemic changed in adult education?
- Reflections and possibilities of distance education in the context of covid-19
- Possibilities and challenges of today's virtual world for adult education
- Digitization of education – methods, content, and activities of teachers
- New demands on workers during a pandemic
- Distance teaching in the current practice of adult education
- The era of real digitization of education
- Reflections of changes in approaches to adult education
- The potential of the virtual world and cyberspace
- Virtual teacher (lecturer) and virtual educational reality
- Unpredictable changes and challenges of the 21st century
- New roles and activities of a virtual teacher
- Development and management of workers during a pandemic
- Adult education in the time of covid – reflection, experience, and reality

For the most part, I present the research that was done in 2020 on the covid-19 pandemic. Issues related to factors that affected both formal and non-formal education were addressed.

The articles should be original, so far unpublished, and not in consideration for publication elsewhere at the time of submission. The book of proceedings is guided by its editor, reviewers, and advisory committee.

This conference proceedings volume published as an e-book and printed book will be submitted for evaluation and possible coverage in Web of Science: Conference Proceedings Citation Index.

February 2021

Jaroslav Veteška & Martin Kursch, editors
Charles University, Prague, Czech Republic
Czech Andragogy Society

Distance adult education in the context of quality management principles

Distanční vzdělávání dospělých v kontextu zásad managementu kvality

Lucie Paulovčáková

Abstract:

The paper deals with distance education of adults, includes the theoretical basis of the researched issues and partial criteria influencing the successful course of education using this form. The aim of the study is based on the analysis of primary and secondary data to identify key factors of distance education and to create a proposal for their connection with the principles of quality management according to relevant ISO standards to increase quality management of education in educational organizations.

Key words:

Adult education, distance education, improvement, ISO, quality management.

Introduction

Distance education has been among the basic forms of education for a long time, particularly in adult education. At present, however, in the context of a global pandemic, this form is becoming particularly important and is being promoted at lower levels of education. The readiness of schools and companies is therefore maximally tested. Monitoring, analysis and evaluation can bring a number of ideas for improving this form of education and improvement in the managerial work of educational and other organizations, e.g. in terms of process management, providing the necessary infrastructure of the educational organization, functional communication flows, etc.

The current situation, which has directly forced this method of education, can be a very good opportunity for organizations to improve the quality management, which is significantly helped by the use of quality management principles in accordance with the relevant ISO standards. The basic precondition for making the desired changes is to perform a thorough analysis of the state of current education, not only from the point of view of the organization, but also from the point of view of the participants in education who are most affected by this area.

This study deals with the factors that influence the use and course of distance adult education. Its aim is to bring ideas for the application of quality management principles in the sense of improving access to distance education of educational organizations, based on the analysis of the results of already conducted research and own research.

1. Bases of the researched issues – distance education and quality management

Distance education in theories and dissertations appears under the terms distance teaching, distance learning, open learning, distance education, etc. Distance education according to Pat-

ru and Khvilon (2002, p. 8) "reflects the fact that all or most of the components of teaching are who is separated from the student in time and space". The European Commission's Memorandum on Open Distance Learning (1991, p. 5) defines distance learning as „any form of study which is not under the constant or immediate supervision of tutors, but which nevertheless benefits from the planning and conduct of instruction in the curriculum". As self-study is an important part, this form depends on the didactic processing of study materials, which must replace the interactivity between the student and the teacher during regular contact teaching. The autonomous component is always supported by consultancy, consultations especially through modern communication media. The extraordinary potential of distance education lies in the freedom of time, place and pace of study.

Distance education is perceived by Simonson & Seepersaud (2018, p. 1) as: "institutional, formal education, where the learning group is separate and where interactive telecommunications systems are used to connect students, resources and instructors." He sees the benefits of this form of education in accessibility, bridging cultural and social differences between students, establishing study groups, etc. Průcha & Veteška (2014, p. 84) describe distance education as a form of study based on „controlled self-study using information and communication technologies" with the most common use in university studies and in further education.

The conference organized by UNESCO on 17 April 2020 (UNESCO, 2020b, p. 2) is based on the characteristics of distance education in the sense that it is „the separation of teacher and student and the use of media and technology to facilitate communication and exchange during the learning process". The relatively high level of independence on the part of the student, the participant in education, is emphasized, therefore study skills must be supported through new strategies of teaching, learning and leadership. Yetik et al. (2020) see open and distance learning as activities in formal, informal and informal domains that are facilitated through information and communication technologies (ICT).

In his study, Alzahrani (2020) focused on the influence of augmented reality (AR) as a basic pedagogical tool that can improve learning at most educational levels, and its use in e-learning. The technology enables the use of three-dimensional images in a real environment, which enhances the e-learning experience. Analyzes have shown that AR increases interactivity, facilitates student involvement and participation, increases learning satisfaction and outcomes, and promotes collaboration in learning, among other things. Fermin-Gonzalez (2020) addressed the issues of inclusive education in the context of the virtual learning environment. It was found that there is almost no development of support programs in this area, so there are a number of challenges for the future.

In distance education, two basic formats are distinguished, namely synchronous and asynchronous (eg Malik, 2015) and their combinations. E.g. according to Liyun He et al. (2020) The synchronous form „includes to some extent the simulation of communication models of traditional education by synchronizing teaching and learning in the form of web conferences and in virtual classrooms". Asynchronous distance learning uses, for example, recorded videos, electronic textbooks, is implemented, for example, via LMS Moodle and takes place according to an individual plan (also Stöhr, 2020, The Best School, 2020).

In connection with the issue of teaching supported by information technologies, some authors, such as Sharoles et al. (2012) and Wong et al. (2012), focus on researching and identifying criteria for the smooth flow of learning using technology. Non-problem-based learning is described as „an approach to learning with the potential to use learning models covering many areas of students' daily lives that are supported by various technologies, from virtual classrooms to e-learning" (Yetik et al., 2020, p. 107).

For example, Katane et al. (2015) as very important in terms of competitiveness of educational organizations and ensuring their sustainable development.

In connection with the quality of distance education, Karatas et al. (2017, p. 64) that „one of the most important factors influencing the quality of online learning is interaction". Education without interaction is considered by the authors to be only a basic transfer of information. Questions on how to improve student interaction are addressed, for example, by Wan-Hussin et al. (2019) and Wanstreet (2006). The need to implement principles and procedures to ensure quality at the level of courses, programs and institutions is also emphasized by the authors Muller et al. (2020), deal with processes using programs that make it possible to evaluate quality and develop strategies to support continuous improvement. The OLC Quality Scorecard, which includes 75 rating indicators, is implemented at the State University of New York (SUNY) for this purpose. Quality in distance education, as described by Malik (2015, p. 238), can be achieved "by introducing quality curricula and teaching distance education programs, providing quality support services to students, training faculty members in innovative methods of distance education teaching, by adopting various methods of distance student evaluation, developing a code of ethics for members and students of the Faculty of Distance Education, ensuring quality infrastructure and technology, launching distance learning courses only with the approval of the National Accreditation Council for Distance Education (NACDE) and adopting control measures through quality control agencies."

In the field of education, it is possible to apply the principles of quality management according to ČSN EN ISO 9000: 2015, ČSN EN ISO 9001: 2015 (p. 10), which are: "customer focus, leadership, people involvement, process approach, improvement, fact-based decision-making and relationship management" (hereinafter also e.g. Nenadál et al., 2018; Paulovčáková, 2020). Partial elaboration and managerial procedures are elaborated by ČSN EN ISO 9004: 2018 in the form of instructions for achieving sustainable success of a quality organization.

2. Methodology of research survey

The aim of the research was to identify key factors for quality provision of distance education, based on the use of secondary data from research and studies and based on analysis of the results of a questionnaire with open questions entered in the online environment from the perspective of university students in the form of primary research. Factors influencing distance education were drawn from the output of the IDEAL project (Impact of distance education on adult learning) solved in 2013-2014 and from the output of a research study on Hassle-free learning - design of criteria in the context of open and distance education (Yetik et al., 2020) . The key factors were then put into the context of quality management principles in a way that can contribute to the improvement of the management system of the educational organization. Qualitative research was applied with the discovery of specific features of the researched issue (Průcha, 2014; Chráska, 2016).

3. Survey outputs – secondary sources and primary survey

The IDEAL project focused on the potential of distance learning in the European higher education area. The aim was to better understand the distance learning offered by universities in European countries. In particular, it was about finding out the knowledge of the needs of adult students and strengthening the social dimension of higher education, increasing the participation of adult students in higher education through distance learning. The project involved 427 respondents (potential students) from European and non-European countries aged 15 to over 55, with the largest representation of 25-34 years – 39 %, according to the report of Owusu-Boampong and Holmberg (2015, p. 18). Respondents came from Finland, Germany,

Greece, Great Britain and Hungary. In the IDEAL project, organized in collaboration with ICDE – the International Council for Open and Distance Learning and ILL – the UNESCO Institute for Lifelong Learning, distance learning is researched and treated in such a way that online learning includes 80% or more of online content and blended learning with 30-79% online.

The central research question was: „How to better adapt distance education offered at European universities to the needs of adult learners?" (Owusu-Boampong & Holmberg, 2015, p. 8). In particular, their motivations and obstacles to distance learning were examined.

The following factors were motivated: motivation to develop professional skills, possibility of self-realization, flexibility to combine study with work and family, flexibility of study pace, improving career opportunities, improving employability, getting a job, opportunity to change career, better employment, opportunity for adult students living in In more remote areas, often with extensive caring responsibilities, the return to study was to gain self-confidence and self-organization skills to become self-employed, etc. For older students (50+), personal interest, entertainment, becomes a more significant motivation.

Perceived barriers were mainly the following: lack of personal feedback and guidance in distance education, online requires more responsibility, lack of personal interaction, isolation, loneliness, quality of interaction, lack of social interaction and group activities, too much freedom, high network connection costs, problems with network connection, problems in combining work and education, lack of time due to family responsibilities, insufficient support from employers, lack of experience with online environment, lack of knowledge in ICT, distrust in the quality of distance education programs in contrast to „traditional" forms of teaching , doubt about return on investment, etc.

In the research study „Criteria for problem-free learning in the context of open and distance learning", Yetik et al. (2020, p. 107) to find out the answer to the research question: „What are the topics and criteria for evaluating a continuous learning environment in open and distance education?" Delphic method with ten selected academics, panelists, with expertise in distance education. This qualitative research method brought a total of 47 criteria in the third round and the identification of 10 different topics with the following characteristics:

- Environment involving formal and informal learning in the context of continuous learning (integration of social networks into the learning environment; quality e-learning materials; use of applications and content across different platforms).

- Environment involving personalized and social learning in the context of seamless learning (use of web environment, forums and blog pages; suggestions appropriate to students ,individual and social preferences; identification of target audience characteristics – adapting learning processes to students' needs and wishes with motivation; suitable for cooperation in support of joint study).

- Environment that allows access to resources anytime, anywhere (designing learning materials that can be used online and offline; designing a learning process using mobile devices and accessible learning anytime, anywhere; integrating search tools into the learning environment to ensure a seamless learning experience; using cloud technologies in a learning environment).

- A course environment involving multiple types of devices (using devices that are supported by a wide range of platforms; creating the same visual and sensory design in different devices; using devices that can communicate with each other; using Internet technology).

- Development of students ,educational needs through tasks (identification of students' educational needs and determination of corresponding contents; optimization of learning

processes and environment in connection with providing individual educational opportunities to achieve more effective continuous learning; presentation of study content in small forms, modules, application of so-called microlearning approach, carrying out activities to strengthen the student's own motivation in order to continue their studies, e.g. by informing students about progress, about the remaining time to study a certain area, etc.).

• Environment encompassing the digital and physical world, therefore the offline environment (developing networks for student collaboration; using elements of digital games/gamification; strengthening learning content through offline activities, e.g. in a laboratory environment).

• Criteria for designing a course where previous and new knowledge can be synthesized (synthesizing previously acquired and new knowledge; providing appropriate support in teaching and guiding students to facilitate meaningful learning and maximize learning outcomes; adapting learning styles to students as they see fit most effective, creating study proposals so that students take the initiative in determining the content and conducting evaluations of activities).

• Criteria for designing courses using multiple pedagogical models or andragogy (use of multimedia content taking into account individual preferences of students; equipping students with self-regulatory learning skills, where students manage the learning process themselves).

• Criteria for designing seamless learning processes based on cultural diversity (providing cultural integration, promoting students' understanding of different cultures; assigning tasks to support individuals from different cultures; excluding sensitive educational content related to language, race, religion, etc.).

• Criteria related to the assessment process, assessment of learning continuity (use of formal and informal approaches to assessment; use of elements of students' self-assessment; providing quick and regular feedback to students to support their study progress; use of personalized assessment processes; use of assessment during learning processes rather than evaluation of results at the end of learning).

In the primary survey, key factors supporting successful distance learning, barriers and shortcomings that reduce the quality of distance learning were identified in the form of a questionnaire with open-ended questions. The survey took place in the period of November 2020, suggestions were obtained from 96 respondents. The following key factors emerged from the survey, see Table 1.

Table 1: Key factors supporting successful distance learning

Key factors	Occurrence in %
Effective communication with lecturers, feedback	10,9
The personality and expertise of the lecturer, his presentation skills and ability to engage	10,1
Quality study materials and their availability	9,4
Technical and material equipment (on both sides)	7,8
Information on the course and form of teaching well in advance (including the precise formulation of tasks or other requirements within distance learning) Information on the course and form of teaching well in advance (including the precise formulation of tasks or other requirements within distance learning)	4,7
Motivation of the participant of education	3,1
Other factors with a very low incidence rate: functional internet connection, quality lecturers, quality LMS, webinar structure, adherence to the schedule, involvement of training participants, flexibility and adaptability of the organization, unified teaching platform, ability to master distance learning techniques, building a lecturer's relationship with course participants, making webinar records, etc.	54,0

Source: own processing

In terms of barriers/shortcomings reducing the quality of distance education, the following factors were noted: failure to provide study instructions in time (breakdown of teaching content and resources), unclear or incomplete study instructions, insufficient teacher feedback, insufficient contact with the teacher, inability of the teacher to attract students (monotonous speech, absence of activating elements in synchronous form of teaching), unpreparedness of the teacher, noise in communication, technical background and internet connection, disturbing environment in online teaching, small space for students to express themselves in synchronous form of teaching, large number of distance activities to replace teaching, poor quality materials for study, limited access to study resources, social isolation of students, fears of failure to study, etc.

4. Discussion

In the research study „Criteria for problem-free learning in the context of open and distance education", the authors (Yetik et al., 2020) identified important areas influencing the quality of distance education. A number of criteria, factors, from these areas also appeared in the opinions of university students / respondents. These include, for example, high-quality technical background, access to study resources, development of students' educational needs through appropriately selected distance activities, provision of appropriate support in teaching and student guidance by lecturers, student motivation, support for meaningful learning, courses using multiple pedagogical or andragogical models, evaluation of learning outcomes, regular feedback, etc.

The research study also includes other factors that the respondents did not mention in the primary survey, such as connecting teaching with social networks, using various applications suitable for study support, using educational environments suitable for cooperation to support joint study, use of elements of digital games, etc. The outputs of the IDEAL project contribute to the topic of successful and quality distance education mainly by their elements enriching motivation to study, which is supported by time flexibility of study, student pace adjustment, student development through self-confidence and self-skills eorganization, etc.

In the outputs, this project also included barriers to the successful course of distance education. The agreement with the results of the respondents' survey was reflected, for example, in the feeling of loneliness and isolation during the study, insufficient quality of interaction and group activities, shortcomings regarding technical background or connection, etc. In comparison with the list of barriers connection, lack of experience with the online environment.

Conclusion

Distance learning will become increasingly popular in today's world, is one of the global challenges and is also becoming part of the strategic development documents of education policy. As follows from studies and research surveys, in order to ensure its quality, attention must be paid not only to the technical background, organizational arrangements for the smooth running of education, available base of suitable study materials, but also to the human factor in the form of skilled lecturers using interactive teaching methods. with social networks, creating an environment for group work, supporting the evaluation of student progress, feedback and mutual communication, etc. In order to achieve quality, the existence of a standard for distance education with clearly formulated criteria is also a necessary prerequisite.

The principles of quality management formulated in ISO 9000: 2015 with elaboration in ISO 9004: 2018 can be used to set quality distance education and ensure continuous improvement in relation to the needs and wishes of students as well as the development of technologies and labor market needs. Recommendations for educational organizations resulting from the analysis of the results of secondary and primary surveys can be summarized for each item as follows:

- customer focus – take into account the technical and technological equipment of the student, choose a suitable online study platform for the student (do not use paid versions), adjust the time schedule of online broadcasting, ensure clear communication flows to promote student awareness, develop clear instructions for study and distance activities and provide them in a timely manner, support group discussions online, group work online, use appropriate social networking facilities, provide assessment and feedback, maintain contact with students, motivate and support them to study, etc.,

- leadership – to provide a unified technical platform for distance learning in the organization, uniform elaboration of the structure of educational guidelines, uniform structure of study materials that serve as basic study support, train teachers, provide them with not only technical but also psychological support, etc.,

- involvement of people (employees, teachers, lecturers) – even during the distance form of work to support mutual communication between the organization's management and employees, maintain their motivation for excellent performance, support the environment of sharing experiences, provide feedback from ongoing monitoring, etc.,

- process approach – from the point of view of the organization to set up and monitor processes related to education, communication flows not only between employees but also in

relation to students, to ensure the flow of processes related to providing support services for students and employees, etc.,

- improvement – on the basis of continuous monitoring and final evaluation of the educational process to discuss and propose changes that would lead to ever satisfying the needs of students and teachers and other staff in individual areas, which would increase the quality of distance education, and their successful implementation,
- fact-based decision-making – use the results of the survey related to evaluation and experience with distance education from all target groups, use focus groups and other forms to share opinions, experiences and suggestions for possible further solutions, other procedures that lead to improved distance education ,
- relationship management – maintain and support contact between target groups, create a healthy and supportive climate within the educational environment, use empathy and pay attention to ethics, etc.

By applying the principles of quality management in the approach to distance education, it is possible to increase the value and satisfaction of the student/customer, his loyalty to the educational organization, improve the organization's reputation, expand interest in studying among applicants, increase economic stability, increase process efficiency and overall higher performance, improving communication, improving the personal development of employees and their higher satisfaction, belonging to the organization, strengthening trust and cooperation in the organization, ensuring competitiveness, etc.

Research studies and surveys in the field of distance education can significantly contribute to the improvement of learning management systems and enrich the experience with this form of study in accordance with the current situation on the education market. Questions raised at a conference organized by UNESCO on 17 April 2020 (UNESCO, 2020a, online) may also be inspiring suggestions for further research in the field of distance education:

- What mechanisms are in place to monitor the effectiveness of distance learning programs in terms of coverage, use and learning?
- What strategies help students, teachers and administrators to access and meaningfully engage in distance learning programs?
- What measures are being taken to ensure the quality of distance learning offered through the various platform systems, including Internet, television and radio technologies?

An important area of challenges is also created by the environment of inclusive virtual education with respect for the differences of students with different types of disabilities.

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The importance of ICT competencies development within the pregradual education of future teachers in the current situation context

Význam rozvoje ICT kompetencí v rámci pregraduálního vzdělávání budoucích učitelů v kontextu současné situace

Petr Adamec

Abstract:

The aim of this contribution is to acquaint with the results of a pilot survey aimed at perceiving the level of selected ICT competences among students of the teacher study programme at a university in the Czech Republic. The aim of the contribution is, among other things, to identify important aspects accompanying the study of future teachers linked to the development of their ICT competences, which are important not only at present but also in the future for their practice.

Key words:

Teacher training, information and communication technologies, competences, digital literacy.

Introduction

Information and communication technologies have become part of our lives. But the digital transformation of society also means rethinking the process of preparing future teachers as well as the teaching practice that increasingly requires the integration of digital technologies into the school environment. The role of the teaching profession is to facilitate the learning of pupils by guiding them in applying knowledge and skills to new situations so that they become able to be individuals on their own. If a competency complex is to be fitted into a pupil's life, it is important that the same competences are available to the teacher first.

1. ICT competence of teachers

In university education teacher training, attention needs to be paid to a number of competences that must be acquired by faculty graduates. Průcha, Walterová and Mareš (2003) describe a teacher's competences as a set of professional skills and dispositions to be fitted to a teacher to carry out his profession effectively. Černochová (2003) lists five areas of competence that a teacher must master at professional level – expertise and skills related to his or her training and science; pedagogical, didactic-psychological and managerial skills, information and communication technology skills necessary to apply ICT to teaching; language competences; social communication competences.

Several of them are defined by the European Key Competences Reference Framework for lifelong learning (EU, 2018). ICT skills are explicitly mentioned in this recommended reference framework as part of three areas: learning to learn, mathematical and basic science and

technology skills, and digital skills. Required ICT competences include: the ability to search for, collect and process information and use it in a critical and systematic way, assessing its importance and distinguishing between real and virtual information while understanding relationships. Individuals should be able to use tools to create, present and understand complex information and should be able to obtain, search and use internet services. Knowledge from basic computer applications is important, e.g. text editors, spreadsheets, databases, storage and information management systems, understanding the possibility and potential security risks. Loveless et al. (2011), Oberländr et al. (2019) or Potyrała and Tomczyk (2021) have already been dealing with this issue and topics in their papers.

2. Examples of models for developing ICT competences (not just) for teachers

For example, there are several possible models for developing ICT competences that are implemented in the developed nations of the world. The International Society for Technology in Education (ISTE) is a non-profit organisation to help teachers use new methods and new technologies. The National Educational Technology Standards Project (NETS), of which ISTE is the lead author, developed national standards for ICT-focused education. ISTE NETS was the result of a technical discussion on what teachers should know. The aim of the project was to create models for the pregrade training of teachers and materials to support the incorporation of this training into teacher training programmes of faculty preparing teachers in the United States of America.

The European Pedagogical ICT Licence (EPICT) is a teacher education system that combines ICT integration into the teaching process with training in basic ICT skills. The system uses the ideas of problem learning, teamwork, group learning and critical responses together with the principles of e-learning. One of the cornerstones of the EPICT project is that knowledge and competence cannot be transferred simply by communicating one teacher to another, but that learning is the result of teamwork. This project was carried out in Denmark.

The concept of The European Computer Driving Licence (ECDL) emerged as an effort to establish an objective minimum of knowledge that an individual needs in order to use ICT resources effectively. The ECDL presents an internationally recognised, objective, standardised method for verifying computer literacy through practical tests. The basis of this concept is the publicly available ECDL syllabus (ICDL). This includes a periodically updated range of topics summarised in 7 modules, which defines the material content of the concept of basic computer literacy. Individual modules shall be tested separately.

DigCompEdu´s digital competence framework is the output of the European Commission's Joint Research Centre's long-term research activity. DigCompEdu delineates 22 digital competences of a teacher grouped in 6 domains: Teacher Professional Engagement, Digital Resources, Teaching, Digital Assessment, Pupil Support, Promoting Pupil Digital Competence. The framework contains more detailed descriptions of all digital competences, links between them, concrete examples of activities or development stages for each digital competence. It also sets levels of progress along the lines of the Common European Framework of Reference for Languages. These are presented using a motivational role from A1 to C2: newcomer, explorer, practitioner, expert, leader, pioneer. DigCompEdu belongs to a wider family of digital competence frameworks – The Digital Competence Framework for Citizens, Framework for Digitally Competent Educational Organisations and The Digital Competence Framework for Consumers (Neumajer et al., 2018).

3. Survey Methodology

The contribution seeks, among other things, to identify important aspects surrounding the study of prospective teachers linked to the development of their ICT competences. To this end, a pilot survey was carried out among teacher students at a specific university in the Czech Republic. The pilot survey was conducted through a questionnaire survey using an electronic questionnaire. The questionnaire contained a total of 26 survey characteristics, of which 4 related to the socio-demographic characteristics of respondents. In this post, we present only selected results from this survey. The survey was conducted in October and November of 2020.

4. Respondent characteristics and structure

The respondents to this survey were students of a bachelor's programme, which is designed for graduates of secondary vocational schools who acquire the professional qualifications of a practical teacher and a vocational training teacher, those subjects whose nature corresponds to the focus of a secondary education with a senior examination, or a secondary education subject with a teaching certificate. ICT-focused subjects are also part of the curriculum of this programme. In all these subjects, students should acquire the necessary knowledge and skills to pass on to their future pupils. The structure of respondents by individual sorting characters can be seen in the tables below. The sources of all tables are author's own work.

Table 1: Respondent structure by gender

	Absolute frequency	Relative frequency
Male	58	22,6%
Female	199	77,4%
Total	257	100%

Source: author's own work

Table 2: Structure of respondents by year studied

	Absolute frequency	Relative frequency
First year	130	50,6%
Second year	78	30,4%
Third year	49	19,1%
Total	257	100%

Table 3: Structure of respondents by form of study

	Absolute frequency	Relative frequency
Combined	153	59,5%
Full-time	104	40,5%
Total	257	100%

Table 4: Structure of respondents by age

Age group	Absolute frequency	Relative frequency	Cumulative frequency
Up to 20 years	60	23,3%	23,3%
21 – 30 years	125	48,6%	71,9%
31 - 40 years	37	14,4%	86,3%
41 and over	35	13,6%	100,0%
Total	257	100%	

The average respondent age was 27.6 years. The youngest was 19 and the oldest was 54. A total of 92 % of all students in this field responded to the questionnaire. Respondents included both full-time form and combined form (on-the-job) students.

5. Survey results

The subject of this communication is in particular the answers to the question/item in the questionnaire, which read: *For the following items, which refer to partial ICT knowledge, skills and competences, evaluate yourself to what extent you think you are competent in the areas listed.*

Respondents responded within each indicator that operationalized this query. Within individual indicators, the respondent was then asked to answer on a scale of 1-10, with 1 meaning „I don't know it at all" and 10 meaning „I'm quite an expert at it."

Table 5: Response rate per indicator (in %)

	1	2	3	4	5	6	7	8	9	10
Informatics and Information Society Theory	3,9	5,8	12,1	16,0	20,2	10,9	16,3	9,3	4,7	0,8
Working with electronic resources	0,8	3,1	5,8	9,3	14,8	14,0	18,3	19,1	12,5	2,3
Hardware and Software, Computer Structure and Functions	11,3	16,3	15,2	14,0	8,6	7,4	10,1	9,3	4,3	3,5
Algorithmization and programming basics	41,2	20,2	12,8	9,7	5,4	2,7	3,5	3,5	0,4	0,4
Basic user skills, working with the operating system	0,4	0,4	3,9	5,8	13,2	8,6	12,8	17,5	21,4	16,0
Installing commonly used programs	1,9	3,9	4,7	4,3	12,5	10,1	9,7	16,3	17,1	19,5
Working with a Text Editor	0	0	1,2	0,8	7,0	6,6	12,1	23,3	30,7	18,3
Creating and using presentations	1,2	1,2	1,2	1,2	7,4	5,4	7,8	24,1	29,6	21,0
Working with a spreadsheet	1,9	4,3	8,2	7,0	7,8	12,1	19,5	17,1	12,8	9,3
Working with computer graphics	7,8	9,7	10,9	9,7	17,1	9,7	14,4	9,3	4,3	7,0
Working with sound and video	8,9	8,2	8,6	9,7	15,2	12,1	13,2	10,9	6,6	6,6
Retrieving information and communication on social networks	0,4	1,2	,8	3,5	5,4	5,1	9,3	23,0	24,5	26,8
Working with Internet Mail	0	0	0,4	1,2	1,9	2,7	8,2	19,1	35,4	31,1
Creating and publishing websites	29,2	18,7	12,5	7,8	9,7	6,6	5,8	5,1	3,9	0,8
Working with database systems, building databases	36,6	21,0	14,4	6,6	7,4	4,3	6,2	1,6	1,2	0,8

Source: author's own work

The results show that respondents felt most competent when it came to working with Internet Mail, text editor, social networks, and possibly declaring competence in the creation and use of presentations. The respondents felt less but still relatively competent in basic user skills, working with the operating system and files, installing and uninstalling commonly used software. Relatively lower levels of competence were then declared in their responses by respondents in the field of spreadsheet work, working with electronic information sources. A low level of competence was noted among respondents in the field of audio, video, computer graphics in general. Respondents declared the smallest degree of competence in the fields of web creation, working with database systems, algorithmising or generally programming.

Table 6: Mean values of the response to individual indicators (sorted)

	Mean	Median	Modus	St.deviation
Working with Internet Mail	8,72	9,00	9	1,320
Retrieving information and communication on social networks	8,15	9,00	10	1,861
Working with a Text Editor	8,12	8,00	9	1,570
Creating and using presentations	8,05	9,00	9	1,892
Basic user skills, working with the operating system	7,36	8,00	9	2,087
Installing commonly used programs	7,11	8,00	10	2,452
Working with a spreadsheet	6,56	7,00	7	2,345
Working with electronic resources	6,36	7,00	8	2,017
Working with sound and video	5,44	5,00	5	2,605
Working with computer graphics	5,27	5,00	5	2,561
Informatics and Information Society Theory	5,21	5,00	5	2,075
Hardware and Software, Computer Structure and Functions	4,52	4,00	2	2,588
Creating and publishing websites	3,47	3,00	1	2,489
Working with database systems, building databases	2,85	2,00	1	2,145
Algorithmization and programming basics	2,63	2,00	1	2,014

Source: author's own work

Questions identifying the socio-demographic characteristics of respondents were also included in the questionnaire. In particular, they were gender, age, form of study and year of study. Selected results comparing average respondent responses by gender and study form are presented in the table below. These answers show that women, for example, feel less competent in computer theory and hardware, computer structure or function. On the other hand, women feel much more competent in making presentations or communicating or working with social networks.

Table 7: Comparison of average responses to individual indicators

	Male	Female	Combined form	Full-time
Informatics and Information Society Theory	5,95	4,99*	5,35	5,01
Working with electronic resources	6,66	6,27	6,61	5,98*
Hardware and Software, Computer Structure and Functions	6,26	4,01*	4,79	4,12*
Algorithmization and programming basics	3,41	2,40*	2,65	2,59
Basic user skills, working with the operating system	7,91	7,20*	7,48	7,17
Installing commonly used programs	8,52	6,70*	7,35	6,77
Working with a Text Editor	7,93	8,18	8,14	8,10
Creating and using presentations	7,62	8,18*	7,83	8,38*
Working with a spreadsheet	6,69	6,53	6,82	6,18*
Working with computer graphics	5,36	5,24	5,41	5,07
Working with sound and video	5,78	5,34	5,18	5,82*
Retrieving information and communication on social networks	7,88	8,23	7,89	8,53*
Working with Internet Mail	8,60	8,75	8,74	8,68
Creating and publishing websites	4,03	3,31*	3,39	3,61
Working with database systems, building databases	3,64	2,62*	3,00	2,63

Source: author's own work

The t-test for two independent samples was used to determine the statistical significance of the relationship between dependents and independently variables. The level of significance has been set, as is usual in the social sciences, at 5 %. In order to compare the average responses to the individual indicators, statistically significant differences (marked with an asterisk*) were also found between women and men, as well as between students in full-time and combined forms of study.

It is worth noting in this regard, for example, the statistically significant difference between full-time and combined form students, where full-time students feel much more competent in working with social networks, making presentations or generally working with multimedia (audio, video). Men, unlike women, feel more competent in working with hardware, the operating system, software installation, or the creation and publication of websites. Women, unlike men, are more adept at getting information online.

Summary and conclusion

The current times put a lot of pressure on both teachers and students. Everyone needs to be intensively learning to work with ICT. The inspirational results in this context are reported for example by Ibieta, A. et al. (2017) or Ayala-Perez, T. et al. (2019). Over time, this changes not only the world around us, school, family and other environments, but it is evident that teacher

requirements are changing as well. For more than three decades, digital technologies have infiltrated the work of teachers with varying degrees of intensity and success.

It was only a few years ago that efforts began at European institutions to develop a systematic description of the digital skills and competences that teachers should be equipped with. All colleges that train future teachers should focus intensively on this area in their work, supporting not only teacher students but also, through lifelong learning programmes, other teachers in primary or secondary schools – in their efforts to develop digital literacy and informational thinking among pupils and children.

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Impact of the COVID-19 pandemic on current and expected changes in learning and development of employees

Dopad pandemie covid-19 na současné a očekávané změny ve vzdělávání a rozvoji zaměstnanců

Michaela Tureckiová

Abstract:

The development of approaches to learning and development of employees led to a higher share of the distance (digital) education before the onset of COVID-19. Nevertheless, the changes that took place in this area in 2020 can be considered unprecedented. Organizations are making a choice between strengthening the strategic approach to the development of their employees and reduction of all educational activities. Goals, content and methods of the provided education are also changing. The paper summarizes the development of learning and development of employees in the "pre-COVID period" and also presents the current situation and possible changes in the future.

Key words:

Learning and development of employees, strategic approach, distance (digital) education, b-learning, methods of employee education, development prediction, survey.

Introduction

In its historical development, learning and development of employees is increasingly focused on the area of professional development, i.e. on the longer-term perspective of career management and systematic development of the potential of employees (Noe & Kodwani, 2018; Werner & DeSimone, 2011). Gradually, it also applies changes in goals, contents and preferred methods of employee development. Individual goals and needs / wishes of employee development are connected with the goals of organizational development and vice versa (Stacho, Stachová & Raišienė, 2019).

In this strategic approach to development of employees, profit organizations can focus simultaneously on the competitiveness of the organization and the meaningfulness of the performed educational activities for performance management, effective leadership and achievement of organizational goals (Akdere, M. & Egan, T, 2020; Bartoňková, 2010; Šikýř, 2016). In non-profit organizations, which also include most educational organizations, the application of this approach provides, among other things, the opportunity to truly strategically manage the development of their key employees, i.e. especially teachers and other educators (Weidenseld & Bashevis, 2013).

Also in the "pre-COVID" period, changes in the field of learning and development of employees were also reflected in a greater application of e-learning, b-learning, or web-based learning and other digital education options. The acceleration of this form of education is particularly evident with the development of globalization, and since the mid-2010s it has also been influenced by mobile technologies and social media (McBride, 2020). According to

Armstrong & Taylor (2020), b-learning is the central category of the human resource / staff development model. B-learning as a specific combination of traditional and modern forms and methods of education contributes to the development of organizational performance through the competencies of its employees.

At the same time, there was a more significant application of practical methods of individual and team learning and employee development. In the last few years, the combination of various forms of continuing education has also become the basis for the development of employees of different types of organizations. Gradual changes in approaches to employee development are also reflected in the emphasis on creating opportunities for work-based learning and learning by doing (Flisi, 2020) and for self-directed education / learning (Hroník, 2007; Jarvis, 2010). All the above enables the development of organizational learning and transformation to learning organization (Bui & Baruch, 2010; Pol, 2008; Senge, 2010; Silins & Mulford, 2004).

1. Changes in employee learning and development in connection with COVID-19

Since the beginning of the COVID-19 pandemic, various organizations have had to address how to provide their employees with access to work from home, how to further develop the potential of their employees and how to provide them with the necessary information about safe behavior during a pandemic. For obvious reasons, the change in the situation in education has affected different types of organizations in different ways. For example, the change was also significant in the segment of educational organizations. Their management had to address both the education of their employees (especially the requirement for a leap in digital competencies of educators) and, of course, the provision of teaching for pupils, students, and adult learners (for an example from academia, see Richardson, Lingat, Hollis & Pritchard, 2020).

According to a survey conducted by Simplilearn, with results published in July 2020, "*the COVID-19 global health crisis disrupted work patterns in companies worldwide. One of the work areas most affected has been employee learning and development. The mandate to move employees to working from home has made it impossible to provide in-person, classroom-based skill training ... Judging by the survey results, the effects of the pandemic look to be wide-ranging and long-lasting.*" (Simplilearn, 2020).

The survey was conducted worldwide and yielded results that also confirm some of the claims presented in this paper and obtained from other sources. For comparison, we present only selected findings of the Simplilearn survey: According to 70% of respondents to the survey, pre-COVID-19 training programs took place exclusively in classrooms, or in a combination of contact teaching and online education. 86% of those who offered courses in direct teaching moved them to the online environment. 82% of this group answered that online courses are at least as effective as full-time courses, 13% consider them even more effective. In terms of the content of education, 76% of respondents expressed their expectation that the priority for the development of digital skills of their employees will increase. (ibidum)

According to Kshirsagar, Mansour, McNally & Matakis (2020, p. 2) "*workplace learning is emerging as one of the earliest and hardest-hit business activities*". Based on their observations, the authors estimate that in North America, between March and the end of June 2020, about half of full-time educational programs were either postponed or canceled. According to them, almost all full-time educational activities were canceled for parts of Asia and Europe.

The cited survey also confirms the fact already mentioned here that "*digital and virtual learning programs were already on the rise before COVID-19 struck*" (ibidum, p. 2). For the current period, they recommend the following steps: "*establishing a learning-response team, protecting employees in in-person programs, adapting delivery, promoting digital learning,*

exploring alternative digital strategies, and practicing and preparing for multiple outcomes"
(ibidum, p. 2, with a description of partial activities on p. 2-6). For the post-COVID period,
they add that "*the stronger learning capabilities that emerge could stand as a positive long-
term outcome from this sobering period*" (ibidum, p. 2). These findings will be the subject of
a partial comparison in the next part of this paper.

2. Situation in the Czech Republic and prediction of development in the post-COVID period

Also in the Czech Republic, the situation in education - not only in the segment of learning
and development of employees - is changing dramatically. The almost immediate transition from
full-time and part-time education to distance education (often in the form of online education) in
the spring of 2020 affected both formal (especially initial) and non-formal education.

In the period after the outbreak of the pandemic and the announcement of anti-epidemic
measures in the spring of 2020, employers mainly addressed the issue of ensuring the safety
of employees and their awareness of the situation, and in the case of the services segment also
the safety of customers, clients, and other service users. Industrial enterprises were ceasing
their production. The situation in learning and development of employees was especially in
the spring of 2020 similar to that described by Kshirsagar, Mansour, McNally & Matakis
(2020). For comparison with the situation in the Czech Republic, it is also possible to use
the practically focused Kazdová article (2020), which also contains the answers of managers
responsible for human resource development.

They confirm the need to move to a distance (digital) form of education both to ensure the
safety of employees, many of whom work from home, and to continue development activities.
It describes in more general terms, the activity of development teams and their cooperation
with implementers of educational activities in the preparation of online education. All this not
only in terms of the current situation, but also to ensure the future system of employee devel-
opment in a combination of appropriate methods, with a greater degree of individualization
and responsibility of employees for their own development (Kazdová, 2020, p. 52-53).

The current (so-called second and possibly subsequent) wave of the COVID-19 pandemic
in the Czech Republic also significantly affects the situation in education, including the learn-
ing and development of employees. In November 2020, the author of this paper turned to
a group of specialists (including methodologists) and managers in the field of education with
a survey that was looking already into the "post-COVID" period. This means to the period
when it will be possible to restore to a greater extent also other forms of education (learning)
and development of employees and at the same time use the positive experience with the dis-
tance (digital) form of education.

Within the survey, respondents were asked 2 questions:

RQ1: What development do you anticipate in the area of employee development and learning
in the next ("post-COVID") period?

RQ2: What methods are effective in distance learning?

Respondents first answered the questions in writing, then they were able to supplement
and specify their answers in online interviews. Survey respondents (n = 23) were selected by
deliberate selection and represent a wide range of experts from various forms of education
(formal and non-formal education, initial and further education) and types of organizations
(from school and other educational organizations to international enterprises). The share of
educational organizations in the sample was approximately 80% (82.6%, i.e. 19 respondents).
All respondents had at least 3 years of experience in management of employee learning and

development. This allowed them to compare the current state in the area with the "pre-COVID situation " and to make a qualified estimate of future developments in the area.

In response to RQ1 (What development do you anticipate in the area of employee development and learning in the next („post-COVID") period?), the respondents' answers focused on:

Organizational forms of learning and development of employees – respondents usually agree that in the „post-COVID" period the share of distance (digital) form of education will increase significantly compared to the situation „pre-COVID", or educational events will be provided exclusively in this form (R10 with justification „for safety"). Related to this is the „emphasis on the creation and implementation of educational materials and other documents for online education" (R1), including „content cleansing" (R17), „portfolio narrowing to be usable" (R3) and „quality improvement and the effectiveness of education „(R10). As one of the possibilities, R22 mentioned the use of „pre-prepared presentations with a certain interaction towards the learner". For respondents who spoke in terms of a greater share of online education, its mentioned advantage is also the possibility to improve development and learning processes and flexibility in terms of time and place in which education takes place („Digital technologies that transfer us to online environment, thus transcending the boundaries of space and time „ – R11). On the contrary, the disadvantage of distance education is a certain isolation of learners, limitation of social contacts and team education. The risk also arises in the case of limited technological equipment on the part of organizations and learners and an unstable Internet connection. According to the answers of most respondents, an effective combination of organizational forms and methods of education, ie basically b-learning, seems to be optimal (see also the answers to RQ2);

Gamification of education – in connection with changes in the forms, methods and content of employee learning and development, there is also a requirement to include elements of gamification in these activities. The reason is, on the one hand, to keep the attention of participants in education in the online environment and, on the other hand, to use elements of the game as part of learning, especially for the younger generations of employees;

Development of educational programs, software, use of technologies in education – in connection with the expected increase in distance (digital) education and also with ensuring protection against cyberattacks, ie including ensuring the safety of employees in various situations, not only in learning and development;

Greater responsibility of employees for learning and development – refers, of course, to the responsibility for their own education (elimination of deficiencies in knowledge and skills), including the development of digital competencies. Rather, however, individual responsibility was mentioned by the respondents in the general sense of professional development, or even „pressure for self-development" (R5);

Individualisation of learning and development of employees throughout their careers – this area is closely linked both to the just mentioned transfer of responsibility for learning and development of employees, to the „more sophisticated analysis of training needs" (R6) and to changes in individual sectors („automation and robotics vs. focus on individual needs and the development of knowledge workers" – R9 and „employees in sectors with direct social and other work contact, e.g. in health care" – R11). Also in this area, there is an opportunity for the application of online education through „simplification of communication in the online environment and focus on problem solving" (R8).

Respondents also pointed to possible future differences in approaches to continuing development of employees, which result predominantly from divergences in educational needs in sectors or are related to the size of the organization, and from different work experience of employees and their willingness to learn new skills.

In their answers to RQ2 (What methods are effective in distance learning?), the respondents gave examples of specific methods that proved successful in the pandemic:

The effective methods mentioned by the respondents included the following: an instructional video that "maps each step leading to a goal / development of a product ... or, for example, how to work with a program" (R1), an interactive workshop "focused on sharing best practices" (R12), "webinars and videos with "top management, which answers the main topics and questions asked in advance, ... which mainly concern soft skills" (R6), "webinars supplemented by an interactive module" (R4). The respondents also repeatedly mentioned microlearning, peer-to-peer learning, games, and simulations. The respondents considered as crucial the use of methods that enable the activity of participants in spite of the distance learning ("group work through videoconferencing, work on shared documents, a workshop where the lecturer and students work together, e.g. in Excel training, etc.) " (R8)

According to the respondents, methods that have proven effective in distance learning will be applied also in the "post-COVID" period ("webinars, e-learning, company LMS, simulations will be used much more" - R20). Digital learning is likely to be more represented in the coming period, there will be a reduction in contact teaching (in-person programs) and effective interconnections of various forms and methods of education will be developed.

Conclusion

The COVID-19 pandemic significantly affected the learning and development of employees. Organizations had to first ensure the safety of their employees and clients through information on appropriate behavior in the pandemic situation, and almost immediately switched to digital education. In the "first wave", in-person (full-time) educational activities were postponed or canceled. During the transition to digital learning, which was already on the rise in the pre-pandemic period, there was a need for accelerated, sometimes even leapfast development of employees' digital competencies. This concerned not only the learning and development of employees, but in fact all the education of various target groups. New competencies were also needed to ensure other work activities (especially for work from home, including management of this process and remote leading of people).

In relation to employee learning and development, organizations also had to ensure the development of their employees' competencies in the next phases ("second wave") of the COVID-19 pandemic. A much closer connection developed between HR specialists and managers and internal and external implementers of educational activities, namely in the use of technologies, various digital platforms and learning management systems for digital learning. Learning and development of employees moved much closer to the needs of immediate practical application of acquired competencies.

Based on the surveys referred to in this text, and also in accordance with the results of the survey conducted by the author of this paper, it is possible to predict for the post-COVID period an increased share of distance (digital) learning, in an effective combination of rather interactive methods in b-learning. This also means further development of technologies in education and use of already existing online learning tools. Sharing, team development and the possibility of online connection of team members are also likely to be strengthened.

As part of a gradual generational exchange of employees, greater use of peer-to-peer learning, or digital (online) mentoring and microlearning can be expected. In employee learning and development, we can also expect a higher degree of gamification and individualization of continuing professional development according to the needs of employees, with simultaneous higher responsibility of each employee for this development throughout his or her career.

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Virtual Co-Teaching: reflection, reality and potential

Virtuální Co-Teaching: reflexe, realita a potenciál

Zuzana Svobodová

Abstract:

The paper presents a summary of the pre-research phase of a project supported by the Technology Agency of the Czech Republic (TAČR, TL03000133). It summarizes the findings of the scoping review, qualitative studies focused on the obstacles of online teaching, and the initial reflection on virtual co-teaching by students and teachers. Finally, the paper summarizes the information obtained and their use in the implementation of the next phase of the project.

Key words:

Virtual teaching, co-teaching, technical problems, online teaching, cooperation.

Definition of co-teaching

"Effective co-teaching can be compared to synchronized swimming – teammates must carefully coordinate, not only to win but to avoid drowning" (Beninghof, 2012, p.18)

Teaching led by two teachers has been developing more significantly in the Czech Republic in the last ten years. In neighbouring countries, we see similar efforts to use this method of teaching in different contexts. In Germany, for example, the increase in such lessons and their anchoring in the education system is related to legislative changes and the abolition of special schools in 2009. Subsequently, a model of cooperation between a special and a regular pedagogue was developed. Special educators were placed in standard schools, and in addition to multi-year grammar schools, some states began to create a unified school concept, to include children and to create team lessons with special educators (Kuschnereit, Reichmann & Stessun, 2016). In Austria, in connection with the reform of the education system from the school year 2015/2016 and the establishment of a new secondary school (*Neue Mittelschule*), teaching led by two teachers was also introduced in order to increase the efficiency of the pedagogical process. (Wobak & Schnelzer, 2015; Update Schule, 2017).

The exact name of teaching led by two people is not entirely anchored. Experts usually use terms co-teaching, collaborative teaching (Beninghof, 2012) or team teaching (Wobak & Schnelzer, 2015). In the Czech environment, the name tandem teaching has also taken on. Important is, that both educators are simultaneously engaged in the educational process.

Furthermore, the implementation of co-teaching is possible in several ways (Beninghov, 2012; Murawski, 2017; Dove & Honigsfeld, 2018), and currently there are at least five basic options for leading a lesson, where there are two teachers, or a teacher and an expert or a teacher and assistant (Murawski, 2017):

1. One Teacher, One Support: One teacher is in front of the class leading instruction. The other is providing substantive support.

2. Team Teaching: Both teachers are in front of the class, working together to provide instruction.

3. Parallel Teaching: Each teacher takes half of the class in order to reduce student–teacher ratio. Instructing can occur in same or a different setting. Groups may be doing the same work in the same way, same work in a different way, or different work.

4. Station Teaching: Students are divided into heterogeneous groups which go to stations or centres. Students rotate through multiple stations. Teachers can facilitate individual stations or circulate among all stations.

5. Alternative Teaching: One teacher works with a large group of students, while the other works with a smaller group providing re-teaching, pre-teaching, or enrichment, as needed.

In addition to various forms of co-teaching, there are also different ways of staffing. In Germany and Austria, so-called pre-service teachers are often used (*Lehrkräfte im Vorbereitungsdienst*), they have a master's degree and are preparing to pass an examination in pedagogical competence. Furthermore, according to the focus and profile of the school, combinations of regular teachers with special or social teachers, assistants, volunteers, and also combinations with native speakers for bilingual teaching are used (Wobak & Schnelzer, 2015).

Beninghof (2012) defined the basic benefits of using co-teaching, focusing not only on the positive impact on students, but also on the benefits for the educators. Working with another educator will allow teachers natural professional growth, easier behaviour management of the classroom, and easier differentiation. When applying co-teaching, it is possible, for example, to divide students into groups according to their abilities and to take advantage of the opportunity to teach students in different ways, apply different methods, and individualize teaching. From the students' point of view, they mainly talk about the following advantages:

• Access to individual assistance in the classroom

• Access to multiple perspectives about a certain topic

• Support for students at risk

• Better acceptance of diversity and inclusive approach

This method is also documented by the Czech School Inspectorate as highly effective for the development of literacy, key competencies for the development of interdisciplinary relationships, and for effective cooperation of teachers (Zatloukal et al., 2020). However, data from research studies speaks unambiguously about the effectiveness of the method. The ambiguity of the results is mainly due to the limit of measurability of the impacts of co-coaching on the deepening of students' knowledge (Campbell et al., 2018; Eckardt & Giouroukakis, 2018; Krammer et al., 2018; Jurkowski & Müller, 2018).

The interview with an expert on co-teaching in Hamburg, Germany (Dr. Edda Laudahn, Landesinstitut Hamburg, 20.10.2019) pointed to the high difficulty of measuring the effectiveness of teaching by two teachers. Certain factors develop during it that cannot be tested by knowledge tests. The research showed comparable test results for students taught in tandem and individually. In several schools, the individual group even performed better in the knowledge test. Tests that verify students' knowledge are focused on a well-measurable cognitive component of education and do not include the so-called soft skills and competencies (ability to cooperate, independence, etc.).

Virtual co-teaching and project presentation

Virtual co-teaching is a newly emerging method within a project supported by the Technology Agency of the Czech Republic (TAČR). Its creation is based on standard methods of co-teaching and expands on it with a virtual component. It is therefore a collaboration of two educators, where one of them will always be connected virtually. Other co-teaching settings will be the same, i.e. it is possible to implement, for example, one teacher, one support or team-teaching or other models. Virtual co-teaching is currently not researched at all and has not yet been implemented in the Czech environment.

The aim of the project is to experimentally verify the effectiveness of virtual co-teaching and then optimize it based on the findings. In the project, we ask ourselves one main research question, i.e. whether co-teaching is more effective than teaching taught by one teacher. We supplemented this research question with other partial research questions focused on individual areas of co-teaching, i.e. how do teachers evaluate mutual cooperation in virtual co-teaching, what obstacles and benefits teachers describe in the method of virtual co-teaching and how they evaluate virtual co-teaching of students.

The core of the research will be a controlled experiment. The class of pupils from the selected school will be chosen as the control group. The experimental group will again be a class from the same school. Emphasis will be placed on the equality of basic variables (average achievement, average age of pupils, same subject matter, same teacher and same expert and other variables).

The experiment itself will run at the same time (same time period). Teaching in the control group will take place in a standard way, teaching in the experimental group will take place using the method of virtual co-teaching. At the end of the experiment, the results of the acquisition of knowledge and skills will be tested quantitatively on the basis of a test. To answer partial research questions, a qualitative survey will be conducted, at both levels, pupils and teachers. With regard to the need to describe the method precisely, we decided to implement a mixed research design in the project, which will not be focused only on experimental verification of well-measurable outputs, but will be combined with a qualitative approach, interviews and observations.

In the following section, this paper will present the results of the pre-research phase of the project, i.e. scoping review, the results of a qualitative survey focused on the barriers of online teaching and a reflective analysis of co-teaching lessons.

Pre-research phase of the project

The pre-research phase of the project took place in the period from May 2020 to December 2020 and the research team carried out an extensive research, the output of which was a scoping review, then we conducted a qualitative survey from the point of view of the students and teachers at the same time. The pre-research phase aimed to describe in detail all the key factors related to the effectiveness of co-teaching, the effectiveness of virtual teaching and then the combination of both. Based on this knowledge, we will then structure the experiment and verify the effectiveness of virtual co-teaching in the next project period, i.e. in the years 2021-2023.

Outputs from scoping review

When searching for studies, we first used the keyword "co-teaching". The result was more than 2,000 studies. Therefore, we added an advanced search, which was in line with our goal, and gradually refined the search. We identified a total of 49 studies that we had to sort manually. In the end, we selected 19 studies for our sample that meet the main criteria of long-term

research and deal with the impacts of co-teaching or its effectiveness, or work with a virtual component.

Based on thematic analysis, six themes mentioned by the respondents in the articles reviewed were identified in the studies: (1) "co-teaching effectiveness", (2) "problems and obstacles", (3) "methods of and with co-teaching", (4) "teachers' role and relationships", (5) "teachers' cooperation", and (6) "special educational needs" (Veteška et al., 2020).

With regard to our research plan, two areas are key, namely efficiency and problems and obstacles. For the effectiveness of co-teaching (including virtual co-teaching) it is important to deal with its entire process (planning, implementation, reflection, including the choice of the type of co-teaching and its specific variant of virtual co-teaching). Other conditions that affect the effectiveness of (virtual) co-teaching are technical readiness, time factor and consideration of specific educational needs of students.

Technical readiness stands on the border between the topic of efficiency and problems and obstacles. It is technical problems that are the dominant factor identified in the topic "problems and obstacles" (of course in virtual co-teaching). The human factor appears as a significant problem where cooperation does not work, teachers do not plan and evaluate joint teaching, including the division of roles. Another factor that negatively affects the effectiveness of the method is the lack of time, which affects the just mentioned areas of the human factor, i.e. the lack of time for cooperation of teacher pairs.

Barriers to online learning

An exploratory and descriptive qualitative approach (Mayring, 2000 Bradshaw et al., 2017) was chosen to describe the main obstacles to online teaching from the perspective of teachers. A total of 8 semi-structured interviews with first grade teachers were conducted (ISCED 1).

The data was collected using semi-structured interviews conducted during autumn 2020 (i.e. during the second school closure period. Inductive and deductive content analysis identified three main categories that were continuously related to the question of teaching effectiveness.: 1) technical problems, 2) socialisation, and 3) widening differences. The overarching term for these three categories is "effectiveness", which was also the key category identified in the scoping review cited above. (Veteška et al., 2020). The results of the study show 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 maturity and age of students, family situation during teaching and overall personal setting and willingness to learn something new.

The study reaffirmed that personal contacts and standard full-time teaching are irreplaceable, and its absence leads to a further deepening of differences between pupils and complicates the already demanding education of children with special educational needs. At the same time, technical problems make it difficult for students to concentrate at the beginning of the lesson, when teachers have easily managed to get their attention during regular classes, which is another aspect that needs to be taken into account. The beginning of the lesson is a key moment for the overall motivation of students, if technical problems arise, attention is gone, and it is difficult to get it back and the effectiveness of teaching decreases significantly (Svobodová et al., 2021).

Reflective analysis of lessons

In the last phase of the pre-research, we implemented and recorded two co-teaching lessons, which took place in a virtual environment with regard to the COVID-19 pandemic. Subsequently, the lessons were reflected by the pupils and teachers. To reflect on the pupils, a simple

questionnaire was created, which contained two closed questions, i.e. whether the topic of the lesson was suitable for the involvement of the second educator and whether the pupils perceive the benefits of co-teaching in general.

These closed questions were supplemented by three more open ones, in which we asked about the main benefits and main obstacles of co-teaching, leaving the last question completely free and inviting students to communicate whatever comes to mind. Both lessons were conducted with the combination of a teacher and an expert from practice. A total of 28 students participated in these classes and 20 of them completed the questionnaire.

With regard to the suitability of the topic, everyone perceived that it was suitable for co-teaching, which was possibly due to the fact that it was really a practical topic in the economic field. The question of the usefulness of teaching was no longer as clear-cut as the following graph shows:

The students further described the benefits in their free answers, for example by stating the following: „ *if an external expert who has nothing to do with the school and has not seen the pupils in his life lectures, it gives a great incentive not to pay attention, especially in the back benches* “. They also touched on the topic of cooperation between two educators and mentioned a negative experience where "*one jumps into each other's speech or the other prefers to resign deliberately and only one person leads the lesson anyway*". The personality of the educator also seemed important, because as one student stated: „ *Although I gave "rather suitable" and "rather beneficial", but in my opinion it depends on who this expert is and whether the subject and the discussed topic can interest me* “.

In terms of benefits, the pupils mentioned mainly the "*real outlook from life*" and then also the opportunity to learn more and get more information than if only one teacher was teaching. They appreciated the practitioner that he knew more about his field than an ordinary teacher. Only five answers appeared in the free question, which basically illustrated the fears of the cooperation of two people in teaching, one student stated: „ *Honestly, I don't see much benefit. I see a problem with the organization and concept of such lessons. There is a lot of anarchy in it, and above all - if an external expert who has nothing to do with the school and has never*

seen the pupils in his life lectures, it gives a great incentive not to pay attention, especially in the back benches (and it's not a joke, but a medium reality Get ready for it:-D)"

Teachers' reflection took the form of two semi-structured interviews, in which teachers were asked to describe their experience with virtual co-teaching and focus again on effectiveness, barriers, and potential benefits. Both interviewed colleagues evaluated the realized lessons positively, they felt good about the teaching and perceived the benefit of the expert from practice to regular teaching. With regard to efficiency, they perceived (in agreement with the pupils) as a very beneficial view of another expert, more information for the pupils and an overlap into practice.

They again mentioned technical problems as a major obstacle, which can complicate the whole implementation of virtual lessons (not only co-teaching). The area of cooperation between two educators was mentioned as an important area that is crucial for efficiency. One interview said that *"it is very difficult to agree and agree in hours that it will take time and the expert will come only once, so it is difficult." However, one teacher interviewed mentioned another crucial problem area, stating that "a virtual teacher does not know what the students have learned and what they have not, he is a bit like a substitute teacher who is not in the pedagogical process from the beginning, but only for part of the lessons. It is necessary to solve continuity and set up cooperation so that it makes sense."* Thus, they perceive virtual co-teaching as a beneficial method, however, they are aware of some fundamental problem areas that need to be really well treated in order for lessons to be effective and beneficial for students.

Conclusion

The pre-research phase of the project was focused on a thorough analysis of the current state of knowledge in the field of co-teaching and virtual co-teaching. For a quality setup of experimental verification of the effectiveness of the investigated method, it was necessary to identify the already described problem areas, and factors influencing the impact of co-teaching on students. Regarding the virtual component that we are introducing into the method and with regard to the current pandemic situation and distance education in schools, we carried out a study that identified the main obstacles to online teaching.

Subsequently, we recorded two virtual co-teaching lessons, which we reflected on with students and teachers. All three studies show two main areas that need to be considered if we want to educate effectively with the help of virtual co-teaching. This is the technical side and the settings for cooperation. Technical problems are crucial, whether on the side of the school, the teacher or the student.

Even if the cooperation was excellently set up, the roles were clearly divided and the teaching was generally well prepared, the technical problems are able to destroy it. The area of cooperation is more complex, it is necessary to decide in which model the co-teaching will be implemented, how the individual educators will work during the whole lesson, how the whole lesson is scheduled and what roles they will play in it. If the collaboration does not work, it is likely that the mentioned negative effects on students will occur, which will reduce the overall effectiveness of teaching and will not bring the intended benefits for students.

In the next phase of the project, we anticipate taking into account the information obtained, i.e. quality technical equipment and at the same time the correct setting of cooperation between educators so that it is possible to measure the effectiveness of quality co-teaching in a virtual environment.

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Research on gamification usage in distance learning during the COVID-19 period

Výzkum využití gamifikace v distančním vzdělávání v období covid-19

Jaroslav Veteška, Martin Kursch

Abstract:

The article deals with the use of gamification in distance learning, which dominated the Covid-19 period as a form of teaching. It presents and summarizes simple research carried out in the form of interviews of teachers of primary and secondary schools in the Czech Republic. The research results point to the fact that the use of gamification in distance learning is quite common when applying a wide range of game elements. Identifies the main game elements that are used – game forms, competitions, and special challenges. It qualitatively summarizes the reported problems in gamification in distance learning. It also captures some of the suggestions or observations of respondents in the implementation of gamification. It categorizes the causes and reasons of respondents who do not use gamification. It is inspired by the researches of the use of gamification in distance learning carried out during the Covid-19 period and mentioned in the collected scientific articles for 2020 and brings a discussion on the use of game elements in distance learning.

Key words:

Covid-19, distance learning, gamification, game elements.

Introduction

Gamification in education is not only an important modern phenomenon, but the oldest form of effective education and teaching. During the Covid-19 period, distance learning dominated the world due to various security measures. Lockdown closed schools in most countries. UNESCO estimates that more than 90 % of the world's students do not currently go to school in response to a pandemic. More than 1.5 billion students were affected as of April 2020 (UNESCO, 2020). The transition to distance learning is happening very quickly and very widely out of pure necessity (Fields and Hartnett, 2020). Due to proven increased learning efficiency with game elements in teaching (Aries and Wijaya, 2020; Ros et al, 2020; Bovermann and Bastiaens, 2020; Lo and Hew, 2020) and positive effects on the learning individual in the gamification of the educational process (Mackavey and Cron, 2019; Jarnac de Freitas and Mira da Silva, 2020; Leonardou, 2020).

We wondered if gamification was being used in distance learning. Our simple research focuses teachers of primary and secondary schools in the Czech Republic and in the form of questioning we try to find out the answers to research questions. Is gamification used in distance learning? If so, what game elements are most often applied? If not, what is the reason for gamification not being used? The study seeks to identify obstacles and problems in the implementation of gamification and collects suggestions and insights from individual teachers

to improve it. Indeed, instilling these ideas and insights into this form of learning could make the use of gamification in distance learning more effective and of quality.

The IEEE predicted that by the end of 2020, the game would be part of the day-to-day and would take up to 85 % of the time (IEEE, 2014). In his study, Ros et al. (2020) examined students' opinion on the effectiveness of gamification in online cybernetics courses carried out in a distance form. Their research was carried out in the form of an experiment, where control and experimental groups of students were compared. The researchers confirmed statistically significant correlations between students' opinion about the effectiveness of gamification and the actual knowledge and understanding tested by students of this cyber course. The authors of the research come up with excellent ideas for the use of game elements in online courses and with creative methodologies of creating these courses. For example, Klopfer's methodology of 4 degrees of freedom (Klopfer et al., 2018).

Fontana (2020) dealt with gamification of ChemDraw during the COVID-19 Pandemic. While playing the game „Molecule Madness" while teaching, he found that it positively influenced students' wellness and chemical skills. His work shows that introducing multiplayer elements into an online class (1) helps keep the classroom active and (2) encourages engaging learning. Fontana (2020) points out that it is likely that the post-pandemic form of education will find itself with some elements of distance learning that improve, but not replace, full-time teaching.

Aries and Wijaya (2020) examined gamification in the learning process and its impact on business plan. The primary objective of the study was to examine whether distance learning in the form of gamification in business has an impact on students' intentions to become entrepreneurs. The online course was attended by 400 students. The result shows that gamification affects attitude towards behavior, perceived behavior control, and subjective norms. These factors then have partly positive effects on changes in student behaviour and are relevant to business plans.

Mackavey and Cron (2019) found that innovative case-based strategies and gamification are effective in engaging students in challenging environments. Students respond positively to cases with game elements. Bovermann and Bastiaens (2020) revealed correlations between gamification and the degree of motivation of bachelor students to learn. Lo and Hew (2020) also compared the effects of flipped classroom learning with traditional and distance learning with gamification. The results showed that students learning by the flipped classroom method with gamification statistically significantly exceeded their knowledge and performance over other students learning in the traditional model, but also over students in distance learning with gamification. Leonardou (2020) also finds gamification in distance learning to have positive effects. Jarnac de Freitas and Mira da Silva (2020) even found the effect of general increase in participation and retention on gamified MOOCs.

Our study builds on studies conducted in 2020, presented in academic periodicals. In the following databases ERIC, Complementary Index , Academic Search Ultimate, Scopus®, Supplemental Index, APA PsycInfo, Social Sciences Citation Index, Directory of Open Access Journals, Gale eBooks, Springer Nature Journals, ScienceDirect, MEDLINE, JSTOR Journals, Library, Information Science & Technology Abstracts, Business Source Ultimate, Humanities Source Ultimate, we managed to find over 52 articles from 2020 dealing with distance learning and gamification , where after our revision using the Mixed Method Appraisal Tool (MMAT), version 2018 we have allocated 8 articles [1] that actually examined the use of game elements in distance learning or gamification effects in distance learning in the Covid-19

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[1] See http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/fetch/127916259/MMAT_2018_criteria-manual _2018-08-01_ENG.pdf.

period. These articles inspired us to do our research, and we based it on them as well. They are as follows: Aries and Wijaya (2020); Ros et al (2020); Bovermann and Bastiaens (2020); Lo and Hew (2020); Mackavey and Cron (2019); Jarnac de Freitas and Mira da Silva (2020); Leonardou (2020) and Fontana (2020).

1. Research sample

The subject of our research were teachers of primary and secondary schools in the Czech Republic. Our survey reached 90 teachers, the sample was chosen randomly at our friendly schools, and we achieved a return on all 90 addressed questionnaires sent. Replies are anonymized and it is not possible to retroactively identify the subjects of the data provided in accordance with the GDPR.

When analyzing the sample, it can be seen that the stratification of gender and age of respondents in connection with belonging to primary and secondary schools corresponds to the normal representative distribution of teachers in the Czech Republic.[2] While the sample is relatively small, in terms of age and gender distribution it corresponds to the character of the teacher population. Graphs 1 to 3 show the parameters of the sample under investigation.

Graph 1: Gender

Source: custom processing

Graph 2: Age

Legend:
- 20-30
- 31-40
- 41-50
- 51-60
- 60+

Values shown: 4,55 %, 13,64 %, 25,00 %, 34,09 %, 22,73 %
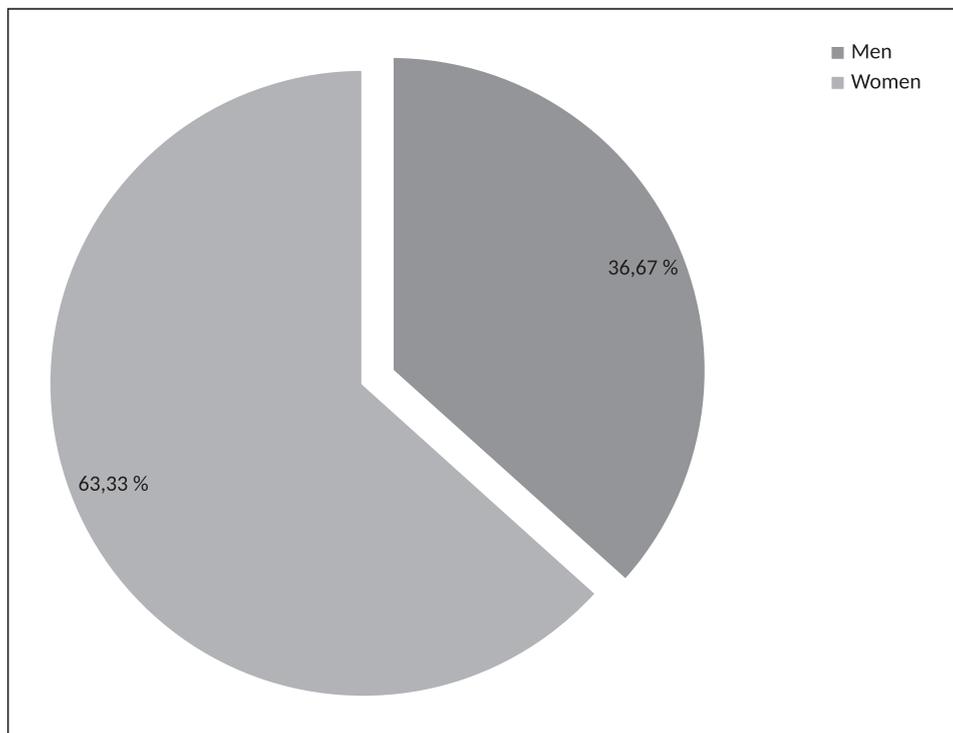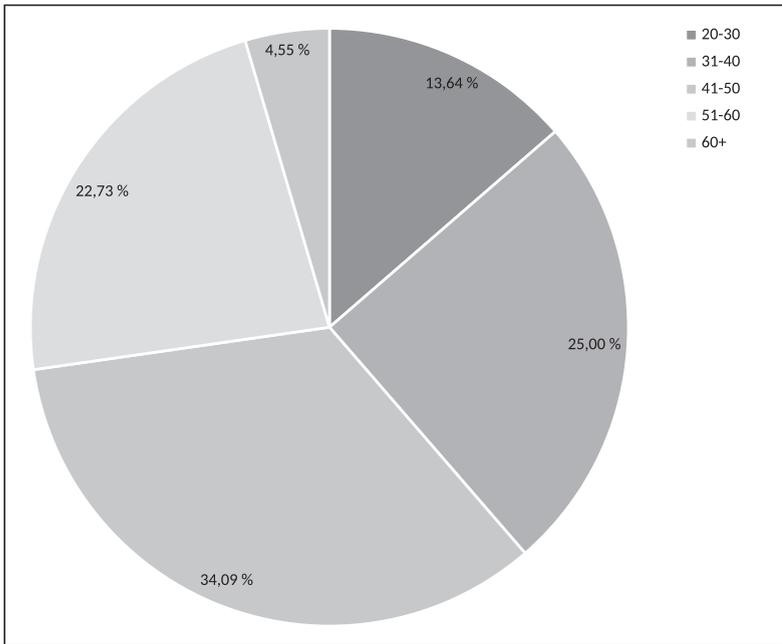
Source: custom processing

Graph 3: School type

Legend:
- PS 1. grade
- PS 2. grade
- SS
- Other

Values shown: 24,72 %, 1,12 %, 31,46 %, 42,70 %
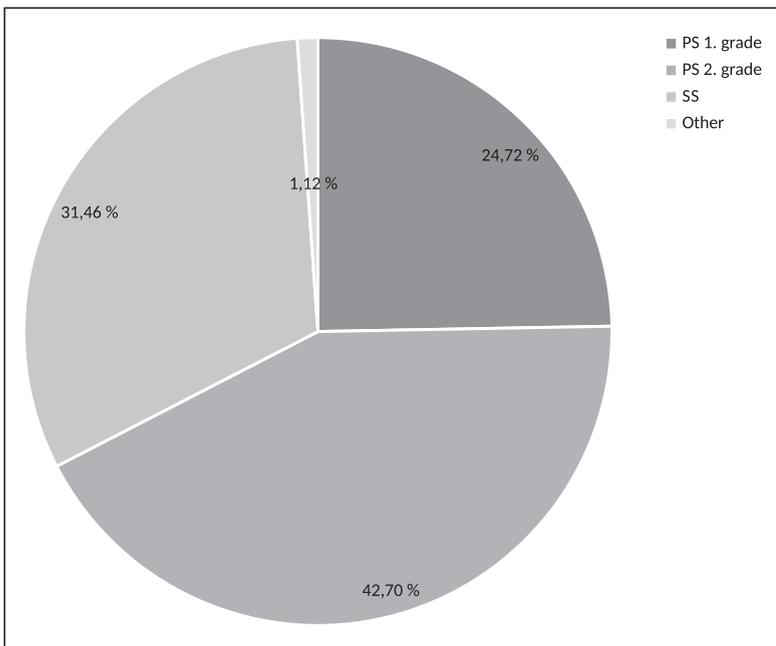
Source: custom processing

2. Research results

We found that 67 % of teachers surveyed reported using game elements in teaching (see Chart 4). The results did not surprise us, but we expected a higher number. Interestingly, approximately 72 % of women and only 60 % of the men surveyed use gamification. Another surprising finding was that a group of respondents under 30 uses gamification in 85 %, a group, a group under 40 in 64 % of cases, a group under 50 also in 66 % of cases, but a group of 50 years or more uses gamification in 85 % of cases.

Graph 4: Use of game elements
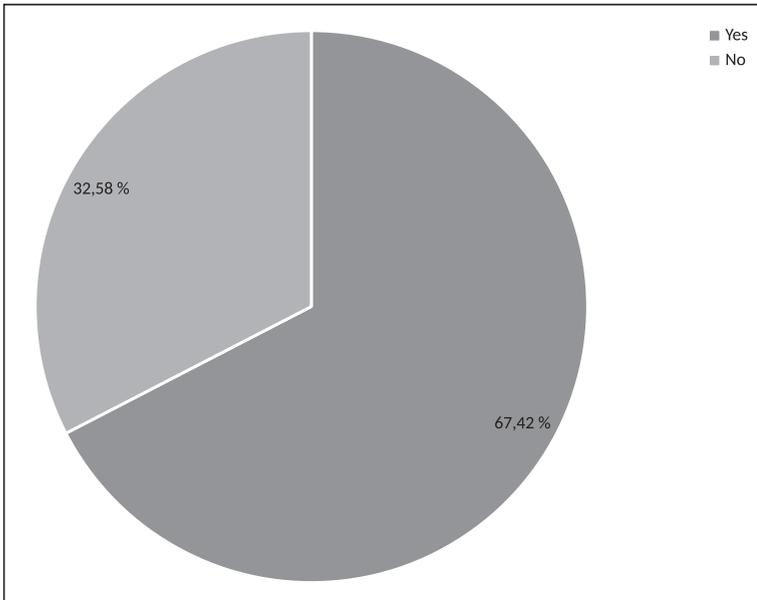
Source: custom processing

However, only individual elements can be used in gamification. For example, the Socrates Method in Law Schools (Ferguson, 2016), where students learn the principles of law by engaging themselves. Ferguson (2016) aptly summarizes the main game elements that can be appropriately applied in gamification:
➢ Leaderboards.
➢ Contest.
➢ Cooperation.
➢ Progressive tracking.
➢ Feedback.
➢ Playback.
➢ Special challenges.
➢ Rewards/ badges.
➢ Game levels.

Based on Ferguson, we grouped game elements into six categories, and examined the most frequently used categories of game elements. We found out which game elements our respondents use the most. These elements are summarized in Chart 5. We left room for respondents

to list other game elements in the category – others. In this category respondents listed the following game elements:

➢ Specific online games (e.g. Ribbon Hero2).
➢ Escape games.
➢ Physical activities via camera (e.g. folding paper models, construction of bodies with skewers).
➢ Other, unspecified, without giving an example (approx. 15 respondents).

Graph 5: Types of game elements in our research
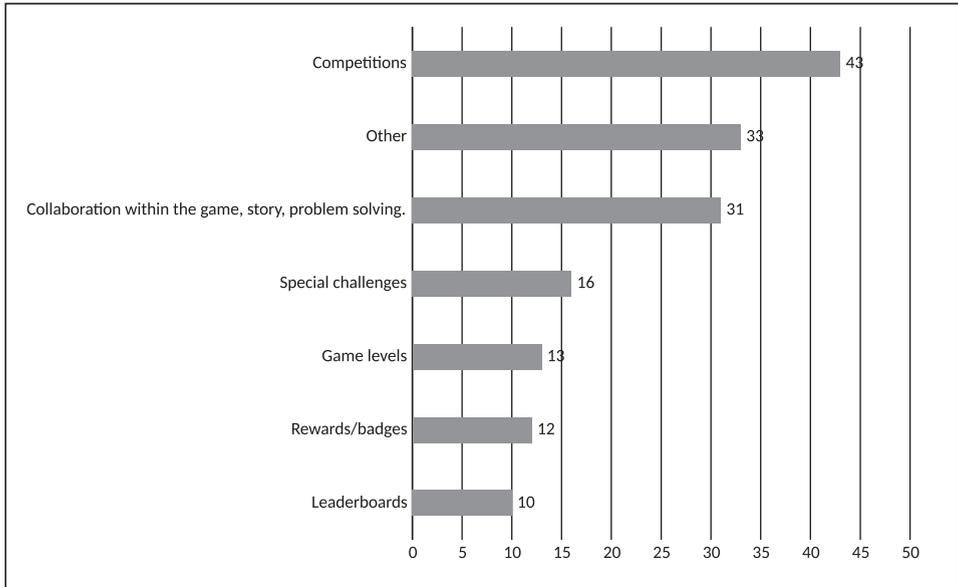
Source: custom processing

We summarized the main problems that respondents cited as the main barriers to effective distance learning with game elements. We only picked up these problems from respondents working in distance learning with gamification. The biggest problems are:

➢ **Gamification cannot simply be implemented with all pupils.**
➢ **Competition elements and cooperation in distance learning are very difficult to include.** "Children can hardly communicate with each other in groups during online learning and solve a specific problem. I am more interested in the competition elements in the form of tasks where children can join outside the online hour, work in a smaller team and turn the resulting work in for evaluation."
➢ **Insufficient participation of children.** "They were not interested in competing, they left the solution to the problem to others, but nevertheless solving simple tasks in the form of a competition brought about a revival of teaching."
➢ **Limited use of Kahoot, Quizlet, Socrative, etc., especially for quizzes**. "The biggest problem: once a student has an unstable connection, the page crashes or loads for a long time and is essentially taken out of the game. If they form part of a group, it spoils the entire group's score.
➢ **Time to prepare**. "It took me a lot of time to compile and complete the leaderboards."
➢ **Technical equipment.** "The biggest problem was with my own slow technical equipment,

which hopefully won't be with a new laptop in the future"; "We started playing some games together within an hour at TEAMS, but we had a lot of work to do"; "The necessary high-quality technical background, learning is more fun for pupils, cannot be applied every time"; "I could have included them only after mastering the technique by me and the pupils – logging in, camera, where, what to find".

➢ **Participation of parents**. "The problem with competitions – parents said."

Collected ideas and insights from distance learning in the form of gamification are:

➢ **Increase the activation of pupils.** "Practicing the subject matter in a fun way, an element of competitiveness, all this helps to more varied teaching."

➢ **Better evaluation techniques.** "Kahoot – I often use it, but it bothers me that it favors fast students, and the slower ones have no chance of succeeding. I started to evaluate by the number of correct answers regardless of speed (points)."

➢ **Use of case studies**. "A team solution to a task based on real practice (it is a specialized subject)."

➢ **Use of special applications, websites.** "I teach the subject of information technology, in which gamification can often be applied. I have good experience with these elements in teaching. Great is the page named "Code", which teaches pupils to program in a playful way."

➢ **Practicing the subject matter in a fun way.** "I like to include game elements in online learning. Students will practice the discussed subject matter in a fun way. I use e.g. Kahoot!, Quizlet live, Quizizz."

➢ **Collecting and in-elaborating feedback from students into teaching.** "Learning apps, sli.do... The feedback I have generated for my students has shown that students want this type of studying activity"; "Great response from the pupils. The pupils are happy to welcome this diversion."

➢ **Increasing motivation.** "Pupils are naturally motivated to try to be "better" than others. The natural competitiveness of some individuals is manifested. The game distracts from consciousness "forcibly" to learn something."; " History lessons: the use of the historical alter ego of pupils and the creation of fictional group kingdoms. Inspiration comes from the dungeons & dragons' social game. I adapted the play for medieval feudal society."; " Kahoot, escape game (for the correct solution of the exercise is given an indication)"; "points in teaching — points for activity and correct answers."; "In online learning, we competed in numbers for speed, we played bingo on mathematics, etc. we conducted research on the most beautiful poster for Tree Day. Quizzes app is very good for practicing vocabulary, provides several types of games, the teacher enters only inputs, and the application generates questions, the pupil gets point for filling in the answers. Praised by all age groups."; " The competitions have proved successful in motivating pupils."

➢ **Attention encouraging**. "Repetition of the subject matter, I used Kahoot."

➢ **Use of elements of drama education in distance learning.** "What was interesting was the use of elements of drama education in online education :).", "Directing the story, playing roles on camera and recording them. Replay."

➢ **Use of Whiteboards.** "It was about using the Whiteboard in Teams, competing to see who would first be able to write a date during a listening exercise. The problem was different quality of connectivity and as a result not very dynamic interaction. cards with advantages to the next fabric. "

➢ **Searching for details and concentration.** "Pupils searched for certain details in the pictures, determined which pictures belong to each other, assigned pictures to sentences, num-

bers... Sometimes it was about speed and accuracy, sometimes it was just about accuracy. The children enjoy it, it encourages the activation of the pupil."

➢ **Playing escape games.** "The so-called escape games have been a great success. The connection with practical activities was interesting. Activities directed out, into the field, kitchen. The use of non-traditional teaching equipment was very attractive and interesting for pupils."

However, if respondents indicated that they do not use the game elements in teaching and do not use gamification in distance learning, we asked about the reasons and we bring a summary of their opinions:

➢ **The high demands of distance learning prevented innovation.** "The school has more pupils with social disadvantages. The difficulty for most was that we had to look for the optimal way to practice the existing curriculum at all, as well as to focus on regularity in picking up and submitting tasks."; "By developing this form of distance learning, we expect that in the following period the game elements will be included."

➢ **Expected little motivation and added value.** "At upper primary school, I consider this to be minimum motivation given to the grouping of pupils."; "In my opinion, the game elements do not bring any improvements."; I use the competitions in full-time teaching, in distance learning I like to see that the pupils at least write down notes and practice in the workbook."

➢ **Lack of IT literacy.** "I'm not very literate with ICT, I don't have a laptop with a microphone and a camera"; "I don't know how, I'm glad I'm good at sound and image."

➢ **Lack of time.** "I practiced examples with students and practiced the subject matter discussed. We did not get to the games. I am planning a financial game in the future, but students do not yet have the necessary knowledge for this game."; "We mainly used consultations – questions, answers, interpretation, frontal teaching. We set playful assignments, but we tried to make the most of the online hours to clarify the problematic curriculum."; "The important thing was to catch up and master the curriculum, not to play."; "In one online class, I taught three classes at once in freshman year. I needed to explain the reading enough, to test how the children read."

➢ **The nature of the subject.** "The nature of my subject does not allow the inclusion of game elements."; "There is no justification in my subject matter. "

➢ **Lack of imaginativeness.** "I didn't think of using these tools. But I'm sure I'll think about it"; "Due to the large number of preparations for online learning, there was no space and no desire to create/invent games. And why should this be the case?"; "In fact, I did not think to play any games"; "It did not suit me, I did not think of anything, the elements are more usable for older children."

➢ **Technical complexity.** "It was not technically possible to do this in the context."

➢ **Other reasons given.** "I focused online learning on discussing basic learning and providing feedback = joint control and correction of tasks assigned for distance offline learning"; "It took me a long time to get used to classical online learning. I didn't teach online in the spring"; "I find the distance learning environment inappropriate."; "Cooperation on the part of the pupils was very limited."

3. Discussion

Arango-López et al. (2018) are studying game base learning (GML) systems, highlighting the importance of the story in the game, its narrative character, and then studying the correlation with motivation and learning process. Their results confirm a positive correlation in both

cases. Ferguson (2016), for his part, points out that gamification activates reward centers. Gamification occurs in all forms of education and learning.

At the time of digitization, we can trace its elements in all areas. An example was the introduction of a game for drivers in Sweden (Mårell-Olsson and Bergström, 2018). The competition was supported by the state. The game consisted in recording all drivers and their speed when passing through monitoring cameras on the roads. Any driver who passed at a speed that does not exceed the limit was subsequently entered into the national competition and could win interesting prizes. The game brought a 22 % reduction in average speed among drivers, increased road safety and pedestrian safety (Mårell-Olsson and Bergström, 2018).[3]

Despite long-term very positive results in our studies, we found that the gamification or use of game elements in teaching is not used by all teachers in the Czech Republic. In our research, 37 % of teachers report that they did not use gamification even during the Covid-19 period for compulsory distance learning. Given the relatively small research sample, we cannot draw representative conclusions, but we can conclude that, based on a qualitative probe, we have been able to find some of the reasons and causes leading to this condition.

The main reasons include the difficulty of distance learning itself, the lack of digital skills of individual teachers, the underestimation of gamification and, finally, some prejudices about the impossibility of using it for various unfounded reasons. On the other hand, respondents using gamification also showed creativity and activity in submitting improvements and suggestions for improving distance learning as well as gamification itself, as well as clearly naming obstacles. Any further study of this type can help us to improve and streamline distance learning with game elements or to improve and streamline overall targeted gamification.

Gamification can be well used to motivate and inspire individuals to learn self-learning in lifelong learning in all types of organizations. Using game elements for educational purposes, organizations, schools, businesses can ensure high demand for educational programs precisely because of their attractiveness, caused by the inclusion of game elements. Gamification is thus one of the phenomena of the modern digital era, which should be handled by all professional educators and andrologists (Kursch, 2019).

Conclusion

Recall that gamification as part of the virtual reality connectivity process seems to be the fastest growing trend in promoting education and learning. In the context of education, gamification is an elaborate concept for the use of game elements in education and learning. More broadly, we could define it as a clever design that actively engages users in a particular task or activity using the game (Veteška, 2016).

Obviously, the Covid-19 period gave us the opportunity to work with gamification in distance learning. Our study revealed an approximate gamification rate of 67 %. Furthermore, it qualitatively identified the most common problems in such a form of teaching – gamification cannot simply be implemented with all pupils; competition elements and cooperation in distance learning are very difficult to include – lack of children's participation; limited use of tools and software; time to prepare; technical equipment and participation of parents.

The study also provides suggestions for improvement. Such suggestions are – increasing the activation of pupils; better evaluation techniques; the use of case studies; use of special applications, websites; practicing the substance in a fun way; collecting and in-elaborating student feedback into teaching; increasing motivation; encouraging attention; the use of elements of drama education in distance learning; use of Whiteboards; searching for details and

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[3] It is necessary to point out the difference between game-based systems that apply only some gaming elements and gamification, which strives for the overall concept of learning as a game.

concentration and playing escape games. Finally, the study summarizes and discusses the main reasons for not using gamification, which are: the high difficulty of distance learning to prevent innovation; expected low student motivation and little added value; lack of IT literacy of teachers; lack of time; the nature of the article; lack of imaginativeness; prejudices and technical demands.

The trend of gamification in the future will certainly affect lifelong learning and teaching and further research in this area. Studying their indisputable advantages, as well as shortcomings, will help to set the course for the continuous improvement of these digital educational methods.

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Acknowledgment

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Neuropedagogical knowledge in further education and counselling for teachers

Neuropedagogické poznatky v ďalšom vzdelávaní a poradenstve pre učiteľov

Anna Pávová, Marian Valent

Abstract:

The study is the output of a research project aimed at creating a model of andragogical counselling in the context of professionalization in teacher education. The partial goal is to identify areas in which teachers need professional development and counselling. In this article, we present the results of a survey in which we focused on the identification of neuromyths and other factors in terms of education and counselling of teachers in this area (N 246). We found out that more than 50% of respondents considered 12 neuromyths to be correct and 5 of them were believed by 90% of respondents. In addition to these findings, the results suggest a tendency that with the increasing number of errors, respondents showed a greater interest in education and counselling in the field of neuromyths.

Key words:

Neuromyths, teachers, education, neuropedagogy, general statements about the brain.

Introduction

This article is a part of a project which focuses on counselling of schools and teachers supporting their professional development and their own learning. In designing the statement of research intent, we assumed that the field of neuropedagogy is the one in which our teachers can have a number of misconceptions and these have an impact on their professional development and also on their teaching. The aim of this support is to improve their own learning and at the same time apply the latest neuroscientific knowledge to their own teaching – to improve how teachers teach their students.

The term neuromyth refers to a misconception caused by misunderstanding, misreading, or misquoting of scientifically based facts (brain research) used in education and other contexts (Dekker et al., 2012). Although neuromyths are incorrect claims about brain activity in connection with learning, their origin is based on scientific findings. For example, the myth of learning styles is based on valid scientific research, namely that visual, auditory and kinesthetic information is processed in different places in the brain. However, these separate structures in the brain are interconnected and there is a strong activation and transfer of information among senses. Therefore, it is wrong to assume that only one sense is involved in the processing of information.

Popular neuromyths are for example: a person uses only 10% of their brain; the brain shrinks if you drink less than 6 to 8 glasses of water a day; if you rub two invisible buttons on the chest, the connection between cerebral hemispheres will increase. According to a survey

of teachers in the UK and the Netherlands, respondents agreed with almost half of the claims involving neuromyths. Seven out of 15 neuromyths were marked as correct statements. More than 50 % of the teachers surveyed believed that they were correct.

Based on this information, we have focused our research on the identification of those findings from neuroscience which are misconceptions and need to be worked with in further education and counselling for teachers.

Methodology of research

The sample included English teachers from primary and secondary school. The aim of the research was to find out which neuromyths the respondents consider to be true and which general statements about the brain they consider to be false and to compare the findings depending on the selected additional items of the survey. We defined the research problem through the following questions:

Question 1: What is the percentage of correct and incorrect answers to the individual items of the survey – neuromyths and general statements about the brain?

Question 2: To what extent will the teachers be interested in education and counselling according to the results of correct answers in the field of neuromyths and general statements about the brain?

A tool used in this research was a survey which was used in various forms in researches around the world. Specifically, we used items related to neuromyths as well as general statements about the brain according to Ferrero et al. (2016). They used the survey developed by Dekker et al. (2012) which included a set of educational neuromyths as defined by the OECD (2002) and Howard-Jones et al. (2009), together with additional general statements about the brain (which were not included in the original OECD source). In our research, we used all 12 neuromyths, which are false statements about the brain and 17 general statements about the brain (13 of them are true and 4 are false).

We excluded two statements from our study – because we did not consider them important and we found them redundant with regard to the target group of the survey. Participants were instructed to mark one of the options correct or incorrect in the first part of the survey. The statements were presented randomly. We excluded "do not know" option from the scale in order to eliminate the opportunity which would mean an escape response for the respondent. The second part of the survey included background information (sex, type of school, length of teaching practice) and other items according to which the results are analyzed (see Table 3).

Specifically, it was information on whether they had taken part in neuropedagogy education in the past; whether they were interested in knowledge about the brain and its impact on learning. A special item was related to the opportunity to encounter scientific knowledge about the brain during their university studies. With other items, we found out whether the respondents consider scientific knowledge to be important for their teaching practice and whether they read professional pedagogical and didactic journals, or professional literature. The last set of items focused on the interest in education concerning the application of neuropedagogy in the teaching of English language and also whether they would apply for such course for teachers. Furthermore, we were also interested whether they would also sign up for the following individual or group counselling in this area after completing the course.

The research group consisted of a total of 1952 respondents from the MPC (Techer In-Service Training Centre) database - teachers of English at primary and secondary schools from all over the Slovak Republic. English language in Slovak schools is first foreign language taught since the 3rd year of primary school. Out of this number, 246 respondents took part in the research and completed the survey, which is 12.6% of the entire set of respondents. Since

the participants were teachers of English language, the statements were in English, which also prevented inaccuracy in translation.

Results of research

The sample included 246 respondents, 227 (92.3 %) of them were women and 19 (7.7 %) were men. 131 (53.3 %) respondents were primary school teachers and 115 (46.7 %) respondents were secondary school teachers. An average length of their teaching practice was 15.5 years. In the following part of the article, question 1 is answered: What is the percentage of correct and incorrect answers to individual items of the survey – neuromyths and general statements about the brain?

Prevalence of Neuromyths

Table 1 summarizes the proportion of correct and incorrect responses for each neuromyth. Teachers were able to recognize 31.8 % (SD 12.6 %) of neuromyths on average. The most prevalent neuromyths were (1) "Environments that are rich in stimulus improve the brains of pre-school children," believed by 98 % of teachers; (2) "Individuals learn better when they receive information in their preferred learning style," believed by 96.3 % of teachers; and (3) "Short bouts of coordination exercises can improve integration of left and right hemispheric brain function," believed by 95.1 % of teachers. In addition to these neuromyths, more than 75 % of teachers believed in three others.

Table 1: Percentage of correct and incorrect responses for each neuromyth.

Item	Incorrect (%)	Correct (%)
Environments that are rich in stimulus improve the brains of pre-school children.	98,0	2,0
Individuals learn better when they receive information in their preferred learning style (e.g., auditory, visual, and kinesthetic).	96,3	3,7
Exercises that rehearse coordination of motor-perception skills can improve literacy skills.	90,7	9,3
Short bouts of coordination exercises can improve integration of left and right hemispheric brain function.	95,1	4,9
Differences in hemispheric dominance (left brain, right brain) can help explain individual differences among learners.	90,2	9,8
It has been scientifically proven that fatty acid supplements (omega-3 and omega-6) have a positive effect on academic achievement.	79,7	20,3
We only use 10% of our brain.	57,3	42,7
Children are less attentive after consuming sugary drinks and/or snacks.	74,8	25,2
There are critical periods in childhood after which certain things can no longer be learned.	54,9	45,1
Children must acquire their native language before a second language is learned. If they do not do so neither language will be fully acquired.	22,4	77,6
If people do not drink sufficient amounts of water (=6–8 glasses a day) their brains shrink.	27,6	72,4
Learning problems associated with developmental differences in brain function cannot be remediated by education.	30,9	69,1

In contrast, the most successfully identified neuromyths were (1) "Children must acquire their native language before a second language is learned. If they do not do so neither language will be fully acquired. "77.6 % of teachers marked it as incorrect; (2) "If people do not

drink sufficient amounts of water (= 6-8 glasses a day) their brains shrink." 72.4 % of teachers marked it as incorrect; and (3) "Learning problems associated with developmental differences in brain function cannot be remediated by education," 69.1 % of teachers marked it as incorrect. Since the target group of the survey were English language teachers, the myth concerning the importance of acquiring a mother tongue before learning a second language was analyzed separately. The results showed that there is no significant difference between primary school teachers (22.1 %) and secondary school teachers (22.6 %); overall 22.4 % of English language teachers believed in this myth.

Knowledge about the Brain

Teachers succeeded in marking correct option in 74.2 % (SD 11.4 %) of general brain statements (see Table 2). The largest number of incorrect responses (1) was marked with following statements: 'Boys have bigger brains than girls', 88.5% of primary school teachers and 81.7 % of secondary school teachers marked wrong option; (2) "The left and right hemispheres of the brain always work together," 67.2 % of primary school teachers and 56.5 % of secondary school teachers marked wrong option; (3) "Regular drinking of caffeinated drinks reduces alertness," 48.1 % of primary school teachers and 53.0 % of secondary school teachers marked wrong option.

Table 2: Percentage of correct and incorrect responses for each general statement about the brain.

Item	Incorrect (%)	Correct (%)
The left and right hemispheres of the brain always work together. (T)	62,2%	37,8%
Boys have bigger brains than girls. (T)	85,4%	14,6%
When a brain region is damaged other parts of the brain can take up its function. (T)	41,1%	58,9%
Regular drinking of caffeinated drinks reduces alertness. (T)	50,4%	49,6%
Circadian rhythms ("body clock") shift during adolescence, causing pupils to be more tired during the first lessons of the school day. (T)	17,1%	82,9%
The brains of boys and girls develop at the same rate. (F)	24,8%	75,2%
Information is stored in the brain in a network of cells distributed throughout the brain. (T)	9,3%	90,7%
Extended rehearsal of some mental processes can change the shape and structure of some parts of the brain. (T)	24,8%	75,2%
Normal development of the human brain involves the birth and death of brain cells. (T)	19,5%	80,5%
Learning occurs through modification of the brains' neural connections. (T)	7,3%	92,7%
Brain development has finished by the time children reach secondary school. (F)	21,5%	78,5%
There are sensitive periods in childhood when it is easier to learn things. (T)	2,8%	97,2%
We use our brains 24 h a day. (T)	17,5%	82,5%
Production of new connections in the brain can continue into old age. (T)	26,4%	73,6%
Individual learners show preferences for the mode in which they receive information (e.g., visual, auditory, kinesthetic). (T)	5,3%	94,7%
Mental capacity is hereditary and cannot be changed by the environment or experience. (F)	16,7%	83,3%
When we sleep, the brain shuts down. (F)	5,7%	94,3%

Interest in Neuroscience

Almost 81 % of teachers are interested in scientific knowledge about the brain and at the same time 93 % of teachers consider scientific knowledge to be important for their own teaching practice. 55 % of teachers encountered scientific knowledge about the brain when they studied at university (we assume that it was only basic information in the context of a compulsory subject concerning human biology) and only 9 % of teachers completed an educational course in this area.

Almost two thirds of teachers read educational journals or scientific literature. Up to 89 % of respondents were interested in a course concerning the application of neuropedagogical knowledge to teaching of English language, and the same percentage of teachers would sign up for such a course if offered. Finally, we were interested in whether they would also reflect on the offer of follow-up counselling after completing the in-service training course, 64 % of teachers showed interest in individual counselling and 67 % of teachers were interested in group counselling. Table 3 summarizes responses of the respondents to the additional questions in the survey. Responses are analyzed based on the type of school they teach.

Table 3: Percentage of yes/no answers for additional items

Item	Elementary school teachers		Secondary school teachers	
	Yes (%)	No (%)	Yes (%)	No (%)
Have you ever taken a course in neuropedagogy?	9.2	90.8	8.7	91.3
I am interested in knowledge about the brain and its impact on learning.	76.3	23.7	86.1	13.9
I encountered scientific knowledge about the brain at university.	52.7	47.3	57.4	42.6
I consider scientific knowledge to be important for my teaching practice.	90.1	9.9	96.5	3.5
I read professional pedagogical and didactic journals, or professional literature for teachers.	66.4	33.6	64.3	35.7
I am interested in a course focusing on the application of neuropedagogical knowledge in the teaching of English.	85.5	14.5	92.2	7.8
If such a course is offered, I will sign up.	86.3	13.7	90.4	9.6
I am also interested in individual counselling in this area after completing the course.	61.8	38.2	67.0	33.0
I am also interested in group counselling in this area after completing the course.	65.6	34.4	68.7	31.3

Interest in the in-service training course and counselling

In the following text, we present the answer to question 2: To what extent will the teachers be interested in education and counselling according to the results of correct answers in the field of neuromyths and general statements about the brain?

The declining number of correct answers in the part of neuromyths also meant an increase in interest in education and counselling ($r = -0.222$, $p = 0$, for primary school teachers $r = -0.196$, $p = 0$ and for secondary school teachers $r = -0.270$, $p = 0$). Correlation analysis did not show any statistically significant relationships in the section on general brain statements (as it was in the case of neuromyths).

Discussion

The transfer of neuroscience research results to education and learning has not been, and is still not, direct (Bruer, 1997; Blakemore and Frith, 2005). Misconceptions about neuroscientific claims are widespread not only among teachers but also among experts in education (Goswami, 2006). Presented research probe examined the prevalence of these neuromyths as well as general knowledge about the brain among English language teachers from all over the Slovak Republic. The results obtained in this study showed that English language teachers in the Slovak Republic believed in a significant number of neuromyths. Specifically, nine out of twelve neuromyths were believed by more than 50 % of respondents, whereas five of them were believed by more than 90 % of respondents. This result is worse than the result achieved in all countries surveyed so far (see Table 4).

This result may be due to the low level of using the foreign resources (despite the fact that English language teachers do not have a language barrier to access relevant research results in the language they speak) and the number of publications and resources popular in the Slovak Republic which disseminate many of the neuromyths, including some of those which were used in our suvey. As in previous studies (Dekker et al., 2012; Gleichgerrcht et al., 2015) teacher characteristics (e.g. years of practice, continual education) had no significant effect on belief in neuromyths or general brain knowledge. As opposed to previous studies, we did not examine the effect of gender in our study, as the sample of the male population was too low. However, in other studies, on average, women believed more in neuromyths than men (Ferrero et al., 2016). As already mentioned by Dekker et al. (2012) and Gleichgerrcht et al. (2015), knowledge about the brain does not prevent teachers from believing in neuromyths.

On the contrary, educators who seem to know more about the brain have made several mistakes in identifying neuromyths. Ferrero et al. (2016) explain this phenomenon as an acquiescence bias; that is, teachers who responded positively to a greater number of general brain statements also gave more positive responses to neuromyths. An alternative explanation proposed by Dekker et al. (2012), is that teachers have difficulty distinguishing between correct and incorrect information about the brain to which they are exposed in their profession. In relation to this, we found that having read pedagogical or educational journals or scientific resourcces slightly increased faith in neuromyths. Unlike the results obtained by Gleichgerrcht et al. (2015) in Latin America, only a small percentage of teachers in the Slovak Republic reported reading primary scientific journals.

Interest in neuroscientific claims and their potential applications to education, together with the high prevalence of neuromyths among English language teachers in the Slovak Republic, reflects findings from previous studies in Asia, Europe and Latin America (Dekker et al., 2012; Deligiannidi and Howard-Jones, 2015 ; Gleichgerrcht et al., 2015; Karakus et al., 2015; Pei et al., 2015; Ferrero et al., 2016). Some neuromyths are markedly more widespread across countries than others (Ferrero et al., 2016). Table 4 shows the results of the prevalence of each neuromyth in the countries where similar studies have been conducted up to now. For example, belief that pupils learn better when they learn in their preferred learning style (85.8-97.1 %) and belief that a rich environment improves the brains of preschool children (86.7-98.5 %, with the exception of the Netherlands, which has a prevalence of 56 %.) is extremely popular in most countries. Our study supports and disseminates these results, because these two myths are also the most popular myths among English language teachers in the Slovak Republic. It should be emphasized that both myths are also part of university studies and study materials (scripts), further education courses, as well as professional monographs, or articles which may have contributed to their dissemination. For example, in the case of learning styles, in the Slovak republic there is a state-supported idea of identifying learning styles as a part of

pedagogical diagnostics, with the subsequent use of these findings in the educational process. Also, many important personalities of didactics have been publishing books for more than 20 years, which specifically deal with this issue and thus strengthen the belief in this neuromyth.

On the contrary, some neuromyths show a low prevalence in particular countries. This is the case of misconception related to the importance of students drinking sufficient amounts of water to prevent their brains from shrinking (prevalence 5-29 %). This misconception has been promoted by the Brain Gym® program, which has only been accepted in some countries, such as the United Kingdom (Ferrero et al., 2016; Hyatt, 2007). Similarly, a few teachers support the idea that learning difficulties associated with differences in brain function cannot be ameliorated by education (prevalence 7-30.9 %) or that children must acquire their mother tongue before learning a second language (prevalence 7-58, 3 %).

Based on our study as well as the previous ones, the prevalence of neuromyths among educators is not an isolated phenomenon, but it rather affects many different countries around the world. Given the gap that exists between scientists and practitioners, many experts agree that it is necessary to establish interdisciplinary collaboration between neuroscientists and educators to inform each other and to create useful connections in both fields (Ansari et al., 2011; Howard-Jones, 2014, Ferrero et al, 2016). In this context, some organizations abroad have already begun to promote collaboration between researchers and practitioners and to promote a better understanding of brain functions in relation to education (for example, organizing seminar series between scientists and educators, creating teacher learning communities supported by education institutes and researchers or the opening of research laboratories for teachers and student teachers to foster dialogue among various stakeholders (Pickering and Howard-Jones, 2007, Coch et al., 2009, Hille, 2011, Ferrero, et al., 2016). Finally, some experts have started to elaborate papers to properly inform laypeople about some of the main findings of neuroscience applied to education (Kalbfleisch and Gillmarten, 2013; Gearin and Fien, 2016).

In Slovakia, unlike in Spain, no researchers have expressed concerns about neuromyths in educational contexts (Ferrero et al., 2016). So far, there are not enough initiatives to prevent their dissemination. Our probe is one of the few research findings which deals with this issue in the Slovak Republic. The COVID-19 pandemic has hit the world hard and it seems to be important to deal with how to teach students via the Internet or how to work with individuals and groups in significantly changed educational conditions. At this point, the current situation appears to be more substantial compared to the findings of neuroscience. However, it is only a matter of time before teachers' views based on misunderstandings are reflected in remote education in fundamentally different way of teaching (if it has not already happened).

Limits of this study: the research sample consisted of respondents who were or are participants in further education. Based on this fact we may assume that they are probably motivated teachers, willing to learn and develop their educational potential. It was a selected group of teachers, specifically English language teachers. Therefore, in the future, we will expand the research sample to include other groups of teachers, regardless of the subject they teach.

The findings show that in the Slovak Republic it is necessary to pay attention to the further education of teachers and also to the university study of teaching in the field of application of neuroscience knowledge to the educational process. Therefore, it would be appropriate to include the most common myths about the brain and education in initial teacher training as well as in further professional development through courses, teacher training programs, or guidance, which respondents have shown considerable interest in. It would also be appropriate to add introductory content about neuroscience and research methodologies in these activities (Goswami, 2004; Ansari et al., 2011; Lilienfeld et al., 2012; Ferrero et al., 2016). Such activities would allow teachers to think critically about brain-based claims and at the same time to

become more critical and thoughtful consumers of neuroscientific evidence (Lindell and Kidd, 2011; Lilienfeld et al., 2012; Ferrero et al., 2016).

Table 1: Quantitative Meeting of Deadlines for Project Submission

Item	GB	NL	GR	TR	PE	AR	CL	Other Latin America	CN	ES	SK
Environments that are rich in stimulus improve the brains of pre-school children.	95,0	56,0	97,0	86,7	91,4	87,8	98,5	97,5	89,0	94,0	98,0
Individuals learn better when they receive information in their preferred learning style (e.g., auditory, visual, and kinesthetic).	93,0	96,0	97,0	97,1	90,6	85,8	95,2	86,2	97,0	91,2	96,3
Exercises that rehearse coordination of motor-perception skills can improve literacy skills.	78,0	63,0	72,0	56,8	88,3	77,5	86,8	75,0	79,0	82,0	90,7
Short bouts of coordination exercises can improve integration of left and right hemispheric brain function.	88,0	82,0	56,0	72,3	77,8	73,0	81,3	87,5	84,0	77,1	95,1
Differences in hemispheric dominance (left brain, right brain) can help explain individual differences among learners.	91,0	86,0	71,0	78,8	74,7	57,9	81,3	73,3	71,0	67,3	90,2
It has been scientifically proven that fatty acid supplements (omega-3 and omega-6) have a positive effect on academic achievement.	69,0	54,0	50,0	79,1	76,0	58,3	66,6	58,8	14,0	45,1	79,7
We only use 10% of our brain.	48,0	46,0	45,0	50,4	67,5	56,1	41,5	60,0	59,0	44,0	57,3
Children are less attentive after consuming sugary drinks and/or snacks.	57,0	55,0	48,0	43,9	56,3	31,0	51,5	55,0	62,0	33,8	74,8
There are critical periods in childhood after which certain things can no longer be learned.	33,0	52,0	24,0	67,3	67,0	71,0	74,2	66,2	14,0	29,9	54,9
Children must acquire their native language before a second language is learned. If they do not do so neither language will be fully acquired.	7,0	36,0	-	58,3	50,0	15,6	19,7	31,4	-	10,9	22,4
If people do not drink sufficient amounts of water (=6-8 glasses a day) their brains shrink.	29,0	16,0	12,0	24,8	11,2	5,6	6,0	15,0	5,0	7,7	27,6
Learning problems associated with developmental differences in brain function cannot be remediated by education.	16,0	19,0	29,0	21,6	27,6	18,5	9,5	10,0	50,0	7,0	30,9

Source: own research

The results will be used as a basis for the creation and implementation of an educational program focusing on the application of knowledge from neuroscience and neuropedagogy in the practice of English language teachers. The knowledge we have gained from the research can help the in-service training course as well as a professional development counsellor of teachers. At the same time, it is satisfactory that teachers showed interest in this knowledge and its application to their own teaching practice, and a considerable number of them declared that they would sign up for a course with such content with subsequent counselling.

To this day, neuroscientific findings are valuable for describing the mechanisms of learning. However, they cannot yet inform education practice directly (Goswami, 2004, 2006; Blakemore and Frith, 2005; Lindell and Kidd, 201; Thomas, 2013). While some researchers keep a cautious but optimistic vision about the future of educational neuroscience (Ansari nad Coch, 2006; Goswami, 2006; Varma et al., 2008; Thomas, 2013), others are more skeptical about the pontential of neuroscience to improve teaching in the future (Bruer, 1997; Bowers, 2016). We believe that we should do our best for our students to be successful in learning. To succeed in this mission we need to know how learning occurs. If neuroscientific findings can help us to understand it, then we should seize this opportunity.

Acknowledgements

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Teachers' further education in the context of COVID-19 pandemics

Ďalšie vzdelávanie učiteľov v kontexte pandémie covid-19

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Abstract:

In the proposed paper, the authors focus on the issues of teachers' work during school closures with an emphasis placed on a lack of learning opportunities for teachers. They provide a brief review of the unexpected situation in education during the first wave of the COVID-19 pandemic and the major challenges teachers had to face. Also the partial results of a research carried out by the authors of the paper are presented.

Key words:

Teachers, COVID-19, distance learning, online education.

Introduction

The first half of year 2020 was extremely demanding for educational systems, schools and their managers, teachers, students, their parents, as well as the entire society. The first wave of the COVID-19 pandemic brought unprecedented challenges and new requirements placed on all stakeholders, which had to adapt to the new, unexpected conditions. The major task – not easy to fulfil – was to ensure continuity of education as all educational institutions were closed in most countries around the world for at least a relatively short period of time. Especially teachers found themselves in a very difficult situation as they had to find alternative forms of educating their pupils or students, but also many of their own learning activities were interrupted by school closures – at least until the moment when they were moved to the online environment.

COVID-19 pandemics and its impact on education

Massive school closures in spring 2020 affected more than 90 % of all learners worldwide, including lifelong learners (UNESCO, 2020b,c). In April 2020, as many as 195 governments opted for school closures in their countries and so, continuity of education could only be ensured by various forms of distance learning selected based on the conditions, in which particular educational institutions worked, their educators' skill, abilities, competencies (see Veteška & Tureckiová, 2020), and preparedness for teaching online, their learners' needs, family environments, social background, connectedness, etc. So, the pandemic brought the need for changing or at least modifying the existing methods and forms of teaching and educators had to find appropriate alternatives to classroom-based education (Barnová, Krásna, Gabrhelová, 2020; Barnová et al., 2020). These new conditions – which were far from being standard – created unique opportunities for experiments with distance learning using digital technologies and verifying new teaching methods with all age groups in learners' home environments.

Teachers during the pandemic crisis

When classroom based education was interrupted, school leaders and teachers found themselves in an unpleasant situation, for which they had not been prepared – neither personally nor professionally. The entire society lived in uncertainty and nobody could predict how long that situation would last. Teachers were not provided with almost any information, any guidance nor support by the ministry of education. In Slovakia, the educational system was not able to react flexibly, there were no online educational activities or workshops for teachers which would help them make the shift from classroom-based education to the learners' and teachers' home environments. There were many teachers who did not even have the necessary devices at home – not mentioning teaching aids. In Slovakia, according to a survey by Dionýz Ilkovič Foundation, 77.4% of the participating 570 science teachers had to use their own devices (Nadácia Dionýza Ilkoviča, 2020).

In general, it can be assumed that teachers were left alone and they had to show really high levels of creativity and initiative to start teaching remotely. As a proof of teachers' flexible response to the new situation, the facts that – based on the above survey – 76.8 % of the participating teachers started teaching online within two weeks from closing their schools using EduPage, Zoom, Microsoft Teams, Skype, Webex, Google Classroom, Google Hangout, etc. (ranked based on the frequency of occurrence) and 90 % of them prepared own educational content, which they shared with their colleagues can be mentioned. KPMG Business Institute (2020) in Slovakia found out that one half of the responding teachers taught less than 2 hours a day during the pandemics, and one third of the participants were in contact with their students for 3-4 hours a day.

Despite their efforts, there were many challenges they had to face. The results of a survey on the sample of 4.859 participating teachers from Europe carried out during the first wave of pandemics by School Education Gateway (Survey on Online and Distance Learning – Results, 2020) show that 66.9 % of all respondents had no previous experience with online teaching and additional 3.3 % of participants had never taken part in online learning activities. So, it is not surprising that they had to face a range of challenges when classroom-based education was interrupted, e.g. pupils access to technology (49.2 %); increased workload and stress related to working from home (43.3 %); keeping all pupils motivated and engaged (42.7 %); involving pupils from socially disadvantaged homes (36.3 %); teachers' access to technology – computers, software, stable Internet connection, etc. (34.3 %); converting activities and content into online/distance learning (28.2 %); preparing the content of online and distance learning (27.5 %); assessing pupils' progress (24.6%); low levels of teachers' pedagogical digital competence (23.8 %); low levels of pupils' digital competence (23.8%); communicating with pupils (18.6 %); involving disaffected pupils (18.6%); time management and organization (18.0 %); supporting pupils with special educational needs or disabilities (17.8 %); communicating with parents/caregivers (13.1 %); and little direction and support given by the school (6.6 %). In the case of 1.4 % of teachers, their school had not switched to online/distance learning and 0.9 % of respondents had not noticed any challenges. Similar findings in Slovakia were introduced by KPMG Business Institute (2020), whose respondents considered the biggest challenge interacting with their students in their home environments (45 %). Approximately one third of the participating primary and secondary school teachers complained about technical issues and one third about the lack of relevant resources.

Another issue is represented by the teachers' need for new information, guidance, help and support during demanding situations. European teachers (Survey on Online and Distance Learning – Results, 2020) called for more free resources and tools from education technology companies (44.6 %); clear guidance from the ministry of education (41.4 %); opportunities

for professional development – quick courses on online teaching (37.4 %); video clips, lesson plans, examples of good practice (31.1 %), websites and lists of useful resources (28.8 %); easy contact with experts – e.g. a more experienced online teacher an ICT/technical expert (24.2 %); webinars and teachmeets for teachers to share ideas and challenges (21.9 %); and more educational TV programmes by national media (10.4 %).

Research

Shortly after reopening the first primary schools in Slovakia, the authors of the paper carried out a questionnaire survey in a private educational institution – one of a few in Slovakia offering their full study programme online to all their students (no students were excluded) during the first wave of pandemics. One part of the research was focused on teachers and their satisfaction with various aspects of the realized online education. In open-ended questions, they were also asked about the challenges, they had to face shortly after introducing live-streaming and in the process of online education (for more details, see Barnová et al., 2020; Barnová, Krásna, & Gabrhelová, 2020). Online teaching was a completely new experience for many of them (68.2 % of the participating teachers had no previous experience with online learning/teaching, and further 4.55 % of teachers had no previous experience with online teaching). Although the participating teachers expressed an overall satisfaction with the quality of the realized online education, they listed several problems they had to face. Shortly after the introduction of online education, they noticed the following problems: demanding and time-consuming lesson planning; own digital skills; organization of the educational process; technical problems; and behaviour issues including problems with students' attention and motivation. As gaining experience with online teaching, the challenges were as follows: technical issues; behaviour issues and problems with students' attention; and difficult control and assessment of students' work and performance.

If we compare our findings with the results of the investigation by School Education Gateway (Survey on Online and Di stance Learning – Results, 2020), similarity in several fields can be observed. Both groups of respondents evaluated the newly gained experience both positively and negatively and they saw the benefits of online education in opportunities for innovation, flexibility, using a range of new tools, application of an individualized approach to students, as well as in increased levels of students' motivation and autonomy. Their answers in the field of challenges indicated problems with lesson planning and converting educational content for the online environment, students' motivation and attention, and demanding assessment of students' results.

The above research results can be considered the indicators of fields in which teachers need help and on which further education programs for teachers should be focused.

Learning opportunities for teachers during crisis situations

As the above finding show, teachers need more training for teaching under unexpected conditions and the application of digital technologies can bring a solution in crisis situations when classroom based forms of education are not available (Barnová, Krásna, & Čepelová, 2020). The virtual environment offers opportunities for a range of e-learning activities, webinars, workshops, which can be realized online even under standard – non-crisis situations – but also e-mentoring and e-tutoring can find broad application.

Both e-mentoring and e-tutoring are the best possible options when teachers need immediate help, career or emotional support from an expert or a more experienced colleague and when no face-to-face contact is possible (for more details, see Barnová, Krásna, & Čepelová, 2020; Barnová & Krásna, 2019; Krásna & Barnová, 2019; Barnová & Krásna, 2020; Barnová,

Krásna, & Gabrhelová, 2019). Unfortunately, in Slovakia, these forms of professional relationships have almost not tradition.

Conclusions

Although a lot of attention was paid to learners during the first wave of the pandemic, teachers remained on the periphery of researchers' interest. According to UNESCO (2020d), the everyday work of 63 mill. primary and secondary school teachers had been affected by school closures by April 22, 2020 and their numbers continued to increase. These teachers were expected to ensure their students' continuity of education, to be professional and independent in their work, to adapt to the new conditions smoothly, apply their knowledge, know-how, and – at the same time – to be autonomous and to take over responsibility.

Therefore, respecting teachers' needs and requirements should be a priority in educational systems worldwide (UNESCO, 2020a) and teachers should be provided with sufficient information and training they need for performing their job well. When new requirements are placed on teachers, governments should react flexibly and teachers should be provided with learning opportunities, as well as with coaching and mentoring. During school closures, various forms of e-learning, including e-mentoring and e-tutoring can be well applied.

Acknowledgement

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Distance education of officers-candidates at the time of anti-COVID measures

Distanční vzdělávání důstojníků-kandidátů v době opatření proti šíření onemocnění covid-19

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Abstract:

At present education is undergoing significant changes triggered by advances in technology, introduction of elements of information society and last year also preventative measures in connection with the coronavirus pandemic. One of the possibilities to continue educating university students during the pandemic was to provide distance education. The University of Defence in Brno offered distance education to officers-candidates. When evaluating the efficiency and motivation of students, we applied embedded theory and assessed the performance of two groups of university students.

Key words:

Distance education, officers-candidates, efficiency, coronavirus, university education.

Introduction

Education, further education and retraining have their social and individual significance, purpose and content for their participants in every modern society. Only educational and psychological procedures meeting these requirements can produce the desired outcomes, enrich and develop the autonomous personality (Saliger, 2017). Distance education provides another opportunity for it and is accelerated primarily by scientific and technological advances in information and communication technologies (Veteška & Tureckiová, 2020).

Distance education is an organized form of learning where students are separated in time and space from their tutors for most of their studies. Distance education is often associated with open education but these forms are not identical. Open education can rather be considered a kind of philosophy outweighing the drawbacks of formal education resulting from organizational, administrative, and educational policies of traditional institutions.

1. Distance Education

The current global coronavirus pandemic generates intense pressure on educational institutions which make every effort to continue educating by means of distance learning. Distance education or learning is based on self-study taking advantage of information and communication technologies and is eminently suitable for university education (Průcha & Veteška, 2012). First studies examining the pandemic influence are being conducted in the academic community. They are aimed at examining the efficiency of distance education and identifying obstacles faced by university students. Bouton et. al. have found out that students use these tools to share knowledge about artefacts connected with studies. Another group of authors has applied these findings to the university environment where these practices considerably

improve results, shape positive attitudes to sharing and collectivistic value orientation and motivation (Bouton, Tal & Asterhan, 2021).

Also lower costs in comparison with classroom instruction contribute to delivering distance education. Both the lecturer and especially the student have lower costs. The results of distance education depend on the didactic representation of study materials supported by seminars and consultations substituting to a certain degree the interaction between the lecturer and the students. A broad range of study media used in distance education lays down stricter requirements for the systematically analytical approach to the creation, higher quality, and attractiveness of instructional materials. The scholarly literature gives ample evidence of how teaching models influence learning. Santovena-Casal has conducted a study based on a concept combining triangulation, a theoretical model, quantitative methods (descriptive analysis and contrast of educational means) and qualitative methods (discourse analysis, in compliance with principles of embedded theory). The significance of social and collaborative models in sustainable education has been recognized; both model types encourage positive learning experience. They strengthen relations among students, develop the sense of togetherness in the community having shared interests, foster social cohesion and the sense of community or belonging (Santovena-Casal & Perez, 2020). Educational technology represents a system of communication and exposure of the learning activity of the student.

Many studies examining relations and attitudes of students to on-line learning and distance education have been conducted at universities abroad. Universities are aware of the needs and expectations of students and, therefore, they try to develop effective strategies and solutions for introducing distance education (Peytcheva-Forsyth, Yovkova & Aleksieva, 2018). Methods for distance education have been used in a range of courses for years; researchers inter alia examine digital competence of students at universities (Sanchez-Caballe, Gisbert-Cervera & Esteve-Mon, 2019), on-line interactions in small groups under supervision, the process of development of an on-line community, and analyse how students perceive the community and collective learning (Stoytcheva, 2017).

Professional education of the military personnel of the Army of the Czech Republic also contains areas where the quality of development and competency management of military professionals could be improved (Kubínyi & Veteška, 2017). From the point of view of comprehensive approaches to competency development of the soldier-leader, it is necessary to focus on the newly suggested Cognitive Management and subtle skills (Ullrich, Ambrozová & Sekanina, 2018). It means skills of recognition, decision-making and acting of people when dealing with situations and fulfilling tasks under difficult, rapidly changing conditions (Ambrozová, Koleňák, Ullrich & Pokorný, 2016).

Distance education which is time-and-place independent allows considerably improved access to education. The independence of time and place is promoted by distributed study materials; multimedia instructional and study materials are on trend at present. Individual support of every student, provided that information and communication technologies are available, seems to be feasible in practice.

2. Education by Means of MS Teams

In view of the fact that both classroom instruction and distance education by means of MS Teams utilizing presentations from classroom instruction were provided in the last two school years 2018/2019 and 2019/2020, we can report the results of our observation when students were allowed to do a project for the "Global Economy" subject while the attendance at tutorials was voluntary in the school year 2019/2020 and compulsory in the school year 2018/2019. The main purpose of this tutorial process was the subject-matter of an independent project.

This group of students completed the study project on the basis of compulsory tutorials. Students of the distance education discussed on-line with their tutor the approved topic, purpose, methods and structure of problems investigated in accordance with their interests. Compulsory tutorials were replaced with on-line communication and materials available on the website of the department. The results of learning utilizing strengthened interactions in acquiring and improving intellectual abilities have become better in relation to the deadline for project submission necessary for obtaining a credit.

The collected data was derived from a comparison of classroom instruction and instruction by means of MS Teams. Students of Global Economy were assigned a task to do a project while attendance at tutorials was compulsory in the school year 2018/2019. It concerned total 92 students. In the school year 2019/2020, 94 students were allowed to do a project by means of MS Teams while attendance at tutorials was voluntary. In consequence of the coronavirus crisis in the school year 2019/2020, students voluntarily on-line discussed the approved topic, purpose, methods, and structure of examined problems with the tutor. Compulsory tutorials were replaced with on-line communication and materials available on the website of the department. The major advantage of distance education in military education is participation of professionals from the Ministry of Defence and the General Staff through the Military Data Network using MS Teams in lectures or seminars for smaller groups of students.

3. Research Methodology and Interpretation of Results

Within qualitative research we applied the embedded theory method (Charmaz, 2006) as a suggested specific theory concerning the defined population, environment, and time. The manner of analysis in embedded theory was based on a presumption that theory in various levels of generality was irreplaceable for deeper knowledge of a social phenomenon (Strauss & Corbinová, 1990). The qualitative research was carried out by means of semi-structured interviews with the third year students of Global Economy. The main subject-matter and purpose of the research was to analyse causes of failure to meet objectives in standard classroom instruction as well as distance education.

The embedded theory derived from the research problem in our study which we narrowed down by means of the research question. The research question was phrased to allow freedom to examine the phenomenon carefully and was the same for both groups: What influenced the timely submission of your credit project? By gradual collection and analysis of data we realized whether the deadline for submission was met but we failed to find out why.

The entire process of collection and analysis was based on formulation of concepts connected with the phenomenon examined. The results can be found in Table 1. The qualitative research enabled us to discover reasons why the tasks were or were not fulfilled. Table 2 shows that during the distance education students achieved better results when searching websites for scholarly literature. It was definitely facilitated by the fact that students received instruction by means of MS Teams in all subjects in the winter term of the school year 2019/2020.

Table 1: Quantitative Meeting of Deadlines for Project Submission

Reasons	Classroom instruction 2018/2019	Distance education 2019/2020
Room for professional exams	28	18
Ease of reference when searching for on-line literature	10	40
Use of electronic versions of materials from seminars	10	8
List of websites relating to each lecture	15	6
Unavailability of literature because of closed libraries	0	10
Peace and quiet for doing the projects	15	12
Failed to reply	10	0
Total students	**92**	**94**

Source: own research

Table 2: Facts Influencing the Project Submission Dates

Submission date	Classroom instruction 2018/2019	Distance education 2019/2020
Before the regular end of the term	2	19
By the end of the term	35	49
7 days after the end of the term	24	14
14 days after the end of the term	11	8
21 days after the end of the term	6	3
Total students	**92**	**94**

Source: own research

Our research has indicated that instruction by means of MS Teams contributed to the ability of students to effectively use their knowledge and skills. It was thanks to the fact that instruction by means of MS Teams was provided in other subjects in this term too. The results of our research in independence and responsibility are substantiated by conclusions of Arsham whose research programmes are multidisciplinary and include general optimization, systems simulation, and statistical data analysis (Arsham, 2013) and, moreover, he emphasizes advantages of distance education in his other work (Arsham, 2002).

Conclusion

A successful educational programme still depends on an appropriate combination of educational and psychological skills of the educator and technical means. Traditional technology continues to be used in new distance education programmes. New communication technologies can improve quality standards and increase speed, especially in combination with printed, visual and audio materials enabling immediate interaction.

Effective strategies should be aimed at enhancing awareness of the potential of new technologies used in open and distance education, promoting integration of distance education

into mainstream education, actively promoting technological approaches to education, improving cooperation between the lecturer and student, and stimulating the convergence of various components of educational systems.

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Use of online tools in further professional training of the Prison Service of the Czech Republic

Využití on-line nástrojů v dalším profesním vzdělávání pracovníků Vězeňské služby ČR

Jaroslav Kříž

Abstract:

This study looks at the issue of online training of professional staff working in the Prison Service of the Czech Republic. The aim of the research investigation was to identify and analyse the use of online tools in continuing professional education. Currently, new demands related to the advent of new technologies, globalisation, robotization, artificial intelligence and the turbulent social changes brought about by the COVID-19 pandemic are being developed. Education in the online environment appears to be an important and effective tool to enable employees to continuously develop their knowledge and skills. The results of the research investigation illustrate the situation in online education immediately before the outbreak of the COVID-19 pandemic.

Key words:

COVID-19, online education, further education, professional education, Prison Service.

Introduction

Throughout the world, society has undergone major changes in recent years, mainly linked to new technologies and globalisation[4]. However, today's society is facing turbulent changes related to the COVID-19[5] pandemic. The question has already been asked in the past whether the world globally is ready for another pandemic threat (Damme et al., 2018). The issue followed the recent Ebola[6] and Nipah virus[7] epidemics, when attention was drawn to the global

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[4] The confluence of the digitalization and globalization era gave rise to the concept of "Industry 4.0", which brought the transformation of society. This transformation is leading to major changes in society, education, economics and trade, as with other industrial revolutions. Coming to terms with the changes brought about by Industry 4.0 such as the decline of skill and mechanical work, the need for completely new competences, the uneven distribution of wealth, etc. are needed mechanisms linked to lifelong learning and learning. (Veteška & Kursch, 2018; Oztemel & Gursev, 2020).

[5] The current COVID-19 pandemic first appeared in the Chinese city of Wuhan at the end of 2019 and subsequently expanded worldwide. At the moment, this pandemic is affecting the entire world as it attempts to avoid human and material losses in society (cf. with Abdulamir, & Hafidh, 2020; Ait Addi et al., 2020; Aljofan, & Gaipov, 2020; Usak et al., 2020).

[6] The Ebola virus causes a serious disease with an average mortality rate of around 50%. The largest and most complicated Ebola outbreak affected West African states in 2014-2016, during which the running of the individual affected countries was restricted (cf. with Rimmer, 2018; Damme et al., 2020).

[7] The Nipah virus was first detected in the late 1990s in Malaysia and Singapore. It has spread further in Bengal, Thailand, Cambodia, India, southern China and Bangladesh since. The last epicenter of the virus was recorded in India in 2017 and 2018. Over the past two decades, outbreaks of the Nipah virus have led to numerous deaths. At the same time, this epidemic has increased attention due to its pandemic potential. The epidemic

preparedness and coordination mechanisms of all nations to deal with similar situations. The COVID-19 pandemic has brought in a series of restrictions that seek to mitigate the spread of the disease. Such restrictions include the closure of schools and educational organisations. Even after previous experience, it was quite unlikely that some educational institutions would be fully prepared for such rapid development and the global closure of the aforementioned institutions (Jones et al., 2020).

The study presented deals with the training of specialist staff of the Prison Service of the Czech Republic (hereinafter referred to as 'PS CZ') immediately before the outbreak of the pandemic COVID-19. The research study aimed to analyse the use of online tools in the further professional training of professional employees of the PS CZ and to determine the level of preparedness for the transition of educational activities to the online environment. The COVID-19 pandemic has affected aspects of life such as access to health, the economy, travel, manufacturing, trade and education is no exception. Most schools and other establishments have responded to the closure of educational institutions by shifting learning to the online environment, which is currently becoming the new standard.

However, not all institutions providing education have been able to respond to such a rapid transition. This forced change in the transition to affordable learning pathways, such as e-learning systems and mobile learning applications, plays a crucial role during this pandemic. This has brought to the fore organisations that have been carrying out online education before the COVID-19 pandemic began. These organisations were in a favourable and strategic position vis-à-vis organisations which, in frequent cases, had to make a rapid, chaotic and methodologically unsettled transition to a virtual environment. Part of this study is a reflection of changes in approaches to the education of the staff of the PS CR during the COVID-19 pandemic. More specifically, in the study, we will focus on changing the educational activities of the Academy of Prison Services, which is a departmental educational establishment with a country-wide remit and is also part of the organisational structure of the PS CZ (Law 436/2003 Coll.; Raszková & Hoferková, 2018).

1. Theoretical framework

The Prison Service Academy is responsible for the education of all prison staff. The Prison Service Academy holds the basic qualifications necessary for carrying out work and service duties. It enables its workers throughout their professional lives to further develop their professional competences, while fulfilling the role of immediate education provider. In the field of continuing education of vocational staff of the PS CZ, there are several documents that regulate the whole process of further education (The concept of prison by 2025; European Prison Rules, 2006; ODG No 3/2019; ODG No 5/2016; Law No 436/2003 etc.). These strategy papers seek to respond to changes that force one to continually educate oneself and thereby increase one's qualifications. And it is the qualifications that are directly linked to vocational training and form an individual-acquired system of knowledge, skills of ability, attitudes and working competencies (Průcha, Veteška, 2014).

In the PS CZ, the staff is given a proper opportunity to expand their knowledge, skills and learn about new trends between different scientific disciplines related to penitenciary care and between foreign partners[8] of the PS CZ (cf. Coyle, 2004; Raszková & Hoferková, 2018). At

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has also reduced the running of the country, including educational establishments (cf. with Moorens, 2004; Chatterjee, 2018).

[8] The Czech Republic has long cooperated with foreign prison services and their training centres. This international cooperation is primarily aimed at gathering information, exchanging experience and sharing examples of good practice. At the same time, international cooperation helps to create modern prisons. International cooperation is most affected by the fulfilment of international obligations arising from the Czech Republic's

the same time, online education[9] is also given considerable attention in the prison service in the strategic document (The concept of prison by 2025). Adult education through the technologies brought about by the era of digitalisation has been amplified by the current COVID-19 pandemic, making online education the standard. E-learning training, which is associated not only with computers and special learning software, but also with netbooks, tablets, smart mobiles, robots, etc. This method uses technology to deliver various forms of further education, including conferences, seminars, accredited courses, etc. At the same time, the new method of education is gamification, which uses elements of game design in particular in the areas of entrepreneurship, education and computer science (cf. with Landers & Landers, 2014; Stanculescu et al, 2016; Armstrong & Landers, 2018).

Further training in the PS CZ is structured on management education, which is intended for leading members. Next, language training for professions whose work requires knowledge of a foreign language and staff training. It is the latter which is the focus of the study. The aim of vocational training, which we consider to be further professional training under settled terminology, is to acquire the expertise required to perform a specific function and to fulfil the legal conditions for continuing to do so. The concept of managing further training of PS CZ professional staff can be found in ODG No 3/2019. This is vocational training, which is delivered in the form of training, seminars, e-learning, vocational courses, traineeships and excursions, etc. In addition, panel discussions and consultations are used for training. This training is then subdivided according to the professional composition of the staff and the needs and requirements of the organisational units.

Further vocational training focuses mainly on employees in the labour law relationship with the Prison Service of the Czech Republic according to Act No 262/2006 Sb. Their duties can be characterised as administratively logical for the purpose of detention and the execution of a custodial sentence. They are involved in specialist tasks in human, economic, administrative, medical, etc. (Hendrych, 2010).

Workers in a legal relationship also include professional employees, who are primarily involved in the training and implementation of programmes for the treatment of the condemned. These treatment programmes are constantly changing and with them the therapeutic practices applied. The therapeutic curriculum adapts in time frames to the current conditions and needs of the condemned person and gradually accompanies him through risk assessment, group cohesion, confrontation with the offence committed and training in risk management within the prison. Thus, through treatment programmes, the professional staff works therapeutically on the convicted with a view to reintegrating them into society (Veteška, 2015; Kejřová & Jiřička, 2015; Veteška & Fischer, 2020). Professional staff include a special educator, tutor, tutor-therapist, leisure educator, psychologist and social worker.

These employees are involved in the design and implementation of treatment programmes[10]

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membership of international organisations (UN, EU, Council of Europe, etc.). The Czech Republic is a member of the European Association of Prison Services, which associates 30 prison services across the European continent (Statistical Yearbook of the CZ, 2019). At the same time, the PS CZ, through the PS Academy, is also a member of the European Association of Educational Centres (EPTA), which focuses on cooperation in the field of personal training in the context of the whole Europe (Statistical Yearbook of the CR, 2019).

[9] We can characterize e-learning as an educational process that is linked to computers and information and communicatio n technologies. It is implemented in an educational environment, with education taking place to achieve educational objectives (Eger, 2020).

[10] The treatment programme contains work, education, special education and special interest activities with a differentiated approach to each convict as they are implemented. The programme is being developed in conjunction with each individual convict who carries out a custodial sentence of more than three months, with the involvement of specialist prison staff involved in its creation. The rehabilitation of convicts takes place through a program of treatment legally supported by Section 41, Act No 169/1999 Coll., on the enforcement of prison sentences (Biedermanová & Petras, 2011 and Veteška, 2015).

(cf. Hendrych, 2010; Veteška & Fischer, 2020; Raszková & Hoferková, 2018). As these workers work directly with accused and convicted persons, they are subject to high demands. These demands include higher education and the subsequent systematic continuing professional education in the context of lifelong learning. Under the European Prison Rules (2006), prison staff maintain and improve their knowledge and professional competence through participation in on-the-job courses throughout their careers, with such professional development being provided at appropriate time intervals.

2. Methodological background and results of the research investigation

The fundamental research problem that is the subject of this research study can be defined as: How common is the use of online tools in the further professional training of professional employees of the Prison Service of the Czech Republic? To achieve this goal, the research was carried out using a quantitative-oriented research design. A questionnaire survey was chosen as the research method. This investigation was conducted from September 2019 to January 2020. For the entire research part, communication with individual organisational units of the Prison Service throughout the Czech Republic, i.e. individual prisons, has become pivotal. The selection – i.e. the involvement of each of these prisons was made by a random selection in which each element, each unit of the population has an equal chance and at the same time an equal probability of becoming an element of the sample. Specifically, it was a simple random selection (cf. with Zich, 2014 and Průcha, 2014).

Individual prisons were approached by means of e-mail communications conducted with the executives and press officers of the selected facilities. The main factor influencing co-operation was the process of approving the implementation of research in a given prison by executives. In most of the participating facilities, distribution was complicated by internal regulations which did not allow all specialist staff access to the internet, thus in some cases it was necessary to choose the distribution of printed questionnaires sent by post. The return on the questionnaires was 71%. A total of 115 printed and online questionnaires were obtained N=108 respondents. These were only the technical staff of the PS CZ whose answers were completely anonymous.

The analysis of the strategic documents governing the further education process (The concept of prison by 2025, ODG No 3/2019, ODG No 5/2016, Statistical Yearbooks 2017; 2018; 2019, Annual Reports 2017; 2018; 2019; 2019, etc.) has become the basic starting point for the research area of further education of vocational staff of the Czech Republic. Semi-structured interviews with PS Czech leaders who have the competence to intervene or manage further professional education in the above-mentioned target group contributed to the design of the questionnaire investigation. Subsequently, the basic starting point for the design of the research inquiry was the results of a pre-analysis carried out in the spring of 2019 with specialist prison staff. The aim of the carried-out research investigation was to analyse and characterise the teaching forms of further training of PS CZ professional staff in the online environment immediately before the outbreak of the COVID-19 pandemic.

In the first phase of the research, we looked at the analysis of the frequency of education programmes completed by respondents in one calendar year. Individual posts were also taken into account. The Kruskall Wallisuv test, for which a level of significance of $\alpha = 0,05$ was defined, was used to produce partial results between the various professional categories and the frequency of education programmes undertaken. This method was chosen because the observed variables were classified into more than two groups and did not have a standard split. Based on this test (G = 28.2; p-value = 0.000), where p-value is less than a significance level of $\alpha = 0.05$. Based on this statistical evaluation, we consider the result to be statistically

significant and there is a difference between the jobs and the number of training programmes completed. Table 1 gives us more detailed results.

Table 1: Number of programmes completed by position

job position	Count	Rel. frequency (%)	Number of training programmes completed	
			Average	**Stan. Deviation**
social worker	21	19,4	3,2	1,5
special educator	28	25,9	1,8	1,1
psychologist	14	13,0	1,6	1,0
leisure educator	8	7,4	1,3	0,5
tutor – therapist	6	5,6	1,2	1,0
tutor	31	28,7	1,1	0,9
total	**108**	**100,0**	**1,8**	**1,3**

Source: Custom Processing

Table 1 shows that social workers, who represent less than a fifth of the research population, participate on average in three training programmes, while other jobs mainly participate in one training programme. As a result, respondents to a social worker job undertake more training programmes than respondents to other jobs. As a result, social workers are currently receiving increased attention compared to other jobs (tutor, psychologist, teaching staff, etc.). This attention, and the law's regulation of further training for social workers, confers the most favourable status among other professional employees (Law 108/2006 Coll.). Having identified the frequency of training programmes received by respondents, we can conclude that a comprehensive system of further professional development of employees is primarily implemented for respondents to a social worker position.

Another area of the research investigation focused on forms of further education, which is most often attended by PS Czech experts. Of the results of the questionnaire survey, respondents are most likely to complete accredited courses (49.1 %). The second most commonly used educational activity is e-learning courses of 39.8 %. In contrast, respondents are the least likely to participate in non-formal (formal) further education higher education (4.6 %). At the same time, they were able to select multiple options on this issue. More detailed results are shown in Figure 1.

Chart 1: Evaluation of the most widely used form of education (N=108, multiple choice)
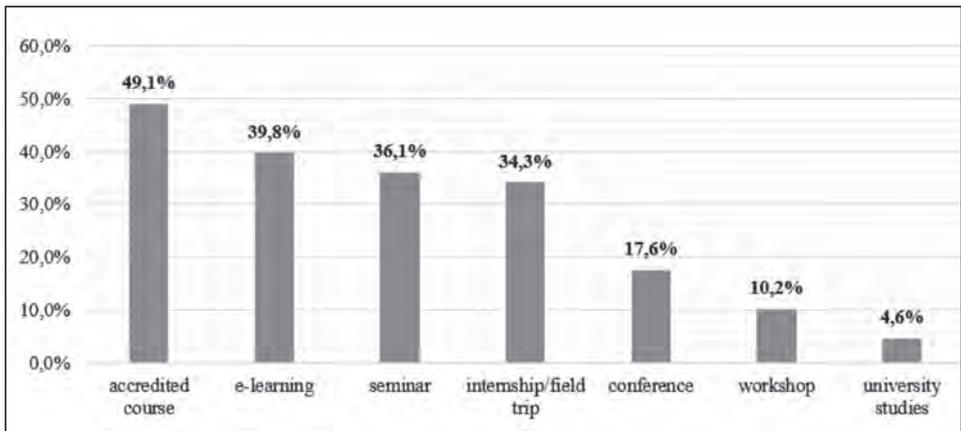
Source: Custom Processing

The use of e-learning for respondents, as shown in Graph 1, was the second most frequently used education. On this basis, an analysis has been carried out of the overall frequency of use of online continuing professional training tools. Results are given in Figure 2, which shows that respondents are most likely to complete 2 (35.2 %) or 1 course (31.5 %) within a calendar year. Only 10.2 % of respondents did not undertake any training course via e-learning during one calendar year.

The results also show that a total of 89.8 % of respondents participated in further education during one calendar year through e-learning. This interesting finding shows that the e-learning system is developed in the PS CZ. At the same time, these results contradict Graph 1, in which the most commonly used form of further professional education is reported as full-time.

This contradiction often tends to be a form of e-learning non-awareness, as it can often only be internal training in organisations that staff do not attach importance to. Whereas accredited courses are given great importance by participants given that they obtain a certificate of completion of training, which they can then use in the organisation to obtain benefits (e.g. financial reward, promotion, etc.).

Chart 2: Use of e-learning teaching
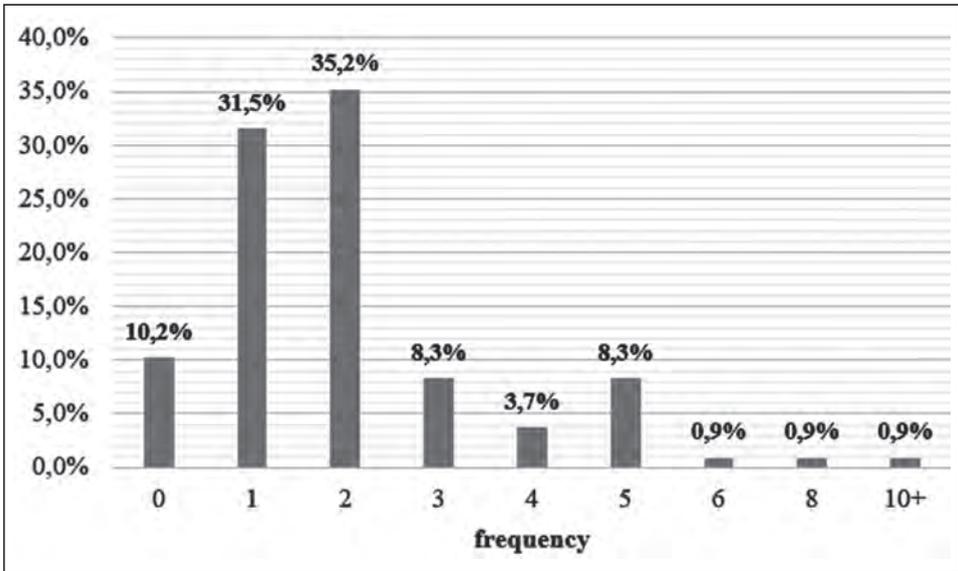
Source: Custom Processing

Another part of the research focused on the characteristics of e-learning tools. Respondents responded separately to each method in the questionnaire survey, where we observed the use of each method. Figure 3 shows that employees of PS CZ are the most likely to complete training programs within the Moodle teaching platform (45.4 %). This software form of education allows online forms of education to reach a specific user more easily and efficiently. We can often see Moodle use only in schools and universities. However, Moodle is now widely used around the world by companies, government organisations, etc. It has great potential for creating successful online learning by providing a number of excellent tools that can be used to improve classical teaching (Kerimbayev et al., 2017; Kursch, 2018).

The results of the research show that Moodle is a widely used tool in the area of continuing professional education in the PS CZ. Furthermore, webinars are the most commonly used (33.3 %). At the same time, the above-mentioned webinars are often mentioned in the context of the Massive open online course (MOOC), which has gained popularity in society due to the fact that anyone can easily access MOOCs to gain access to information, learning materials, communicate with others, share information, materials and experience (cf. with Kop, 2011 and Arpaci, 2020). Other virtual teaching methods are negligible in terms of use among PS CZ staff, such as a video conference with 5.6 %, a video lecture with 2.8% and the least used method is a video seminar with 0.9%. At the same time, we have not seen an answer here in which online education is implemented through gamification.

Chart 3: Exploiting new electronic forms of education
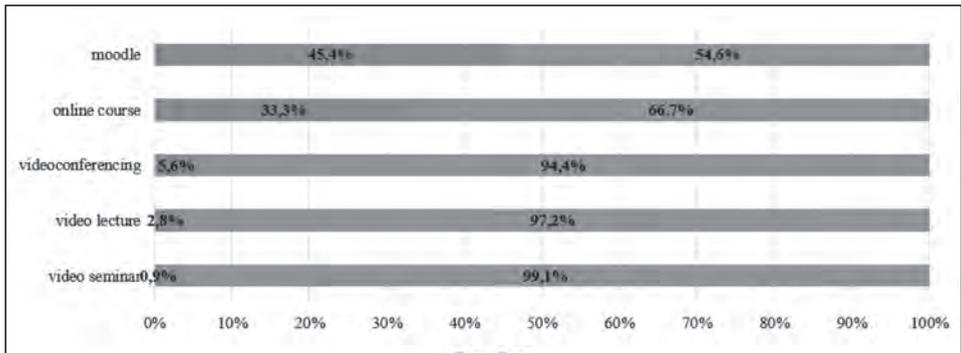
Source: Custom Processing

3. Discussion and summary of results

The research study revealed some interesting findings in the area of continuing vocational education, which include the relatively high use of online continuing education methods. More specifically, it was the use of Moodle and online courses. The PS CZ was therefore aware of the possibilities of using the internet to educate its workers even before the COVID-19 pandemic, and therefore the transition of education to online placement was not a big problem. The methodology and technologies that enable learning in the online environment are a strategic option for meeting employees' training needs. The use of online tools in further education before the COVID-19 pandemic can also be seen in other prison services in Europe (e.g. Slovakia, Norway, Germany etc.). In Poland, for example, self-learning is used primarily in professional development, combined with distance learning, which is delivered through e-learning and b-learning. (Kalaman, 2014; Kneel, 2013).

The PS CZ has long recognized the need to innovate the methods of training of its employees, so it has decided to create and implement several projects that assist in attendance and e-learning education in a sustainable way to expand the existing structure of the PS CZ education (Annual Report 2019, 2020). In the current COVID-19 pandemic, all schools, universities and academies worldwide have closed to prevent the spread of the virus. This has led to virtual testing of new learning opportunities using digital aspects on an unprecedented scale.

Although COVID-19 has a serious impact on mainstream educational progress, educational organisations can use this opportunity to identify shortcomings and accelerate the reform of online education through innovative course content, state-of-the-art technology and efficient management (Sun & Zuo, 2020). This opportunity can extend other online forms of education in the prison environment, such as videoconferencing, which was only attended by 5.6% of respondents. Furthermore, greater use may be envisaged for video lectures and video workshops, which also had very low use in the research investigation.

The Prison Service of the Czech Republic responded to the conditions related to the pandemic by quickly moving to an online environment where several training programmes in cooperation with foreign partners began to be implemented (Vastl & Sejkorová, 2020). At the same time, the vocational training of new members and staff of the PS CZ Committee moved them to the online environment, and so the Academy of the PS CZ was able to continue its activities (Academy of the PS CZ, 2021a). At the same time, other international organisations (CEPOL, EPTA) have created training modules for the staff of the PS CZ, which not only

helped them to further their professional development, but also allowed them to improve in their free time (Academy of the PS CZ, 2021b).

We can conclude that the Prison Service of the Czech Republic has successfully managed the transition of education to the online environment, while turning this emergency into opportunities to further promote international cooperation and the sharing of experience and knowledge to develop its staff.

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Education and its pitfalls in current pandemic society

Vzdělávání a jeho úskalí v současné pandemické společnosti

Lenka Pasternáková

Abstract:

The complexity and complexity of the current school system in learning is an effort to move the position of undemanding and popular daily activities of children and youth of school age. New concepts of educational processes are based on the ideas of humanism and belonging, cooperation and help.Especially at present, it is important to pay attention to the possibilities of effective education in the current social situation marked by a pandemic, which has limited the personal contact between teacher and student.

Key words:

Education, teacher, educational innovation, pandemic.

Introduction

With regard to the teacher's personality, we would like to pay attention first to the concept of personality as such. The concept of personality is a basic paradigm of pedagogical, special-pedagogical, psychological, social-scientific and many other scientific disciplines and theories. It is one of the basic problems of pedagogical theory, because the course and result of the educational process depend on its qualities. Personality is every person with a unique structure of psychic qualities, available with different socialtraits and characteristics (Manniová, 2008). The personality of a teacher should be formed by factors such as mental health, emotional maturity, empathy or a healthy self-confidence to practice the profession of a teacher.

Other factors of a teacher's personality certainly include natural intelligence or the ability to work with oneself in accordance with the emotional, moral side of the personality. Among other things, the teacher should have a broad all-round knowledge and the ability to motivate students to study. According to Obdržálek (2002), the role of the school and the school system is to ensure harmony between education, the socio-economic development of the country and the individual needs of the participants in education. In other words, to adapt the structure of the school system not only to the needs of society, that is, to the social, economic and political needs of the present and the future, but also to the intellectual, emotional, moral and physical needs and requirements of man.

1. Trends in current education

After 1989, strong efforts appeared in Slovakia to humanize the school, as a reaction to the previous uniform and directive pedagogy, but also in connection with attempts to transform and pluralize education. However, the effort to humanize education is not new, it stretches throughout the history of education and pedagogy. It has been most prominent since the 1960s, when the tendency to strengthen the scientific content of education resulted in a strong preference for the cognitive component of education with an emphasis on student performance, a preference for its science component, and an underestimation of its human aspects. The 1970s are referred to as the crisis of man, which manifests itself in the decline of moral values, consumerist way of life, ethnic or religious intolerance, distorting mass culture, etc. (Gabrhelová & Čubirková, 2019; Krajčová, 2012; Šíp, 2018; Veteška & Kursch, 2018).

Pedagogy, psychology and philosophy have begun to emphasize their anthropological orientation, demanding the development of new qualities for a person who will not want to rule the world, but who will constantly improve himself and his relationships with people in the spirit of universal values. He is to be an individual, himself in his nature, but at the same time a full-fledged personality, with a deep moral and spiritual dimension, in order to be able to consciously manage his own life, to overcome himself and the world through creative actions. Petlák (2020) drawsattention to the following principles: Learning to know – that is, to master the tools that can be used to research, explore, understand new and develop throughout life, because real knowledge is one that man constructs himself; Learning to live together – that is, to respect, to respect, to tolerate the differences of others, to cooperate with them, not to fight with them, not to want to control them, but to act responsibly and morally towards them.

Learning to be – that is, to be an authentic personality who knows what he wants, consciously manages his own life, is himself, finds the meaning of his own life, his own happiness and identity. According to her, only a changed, humanized upbringing and education can achieve these goals. The uniqueness of man as the goal and condition of education means to respect that everyone is different, and should remain different even if he goes through the process of education. If we were all the same, the development of humanity would stop. If we recognize that each person must be different, unique, then education must create the conditions for the birth of authenticdiversepersonalities (Balogová, 2010; Dupkala, 2017; Blazejwski & Lewicki, 2011).

Diversity is a guarantee of progress, the very existence of human society, to provide different educational ways, different educational alternatives. Setting the same goal for different students and expecting the same results is unrealistic and pointless. Pupils will have equal opportunities only if the teacher has a different approach to them according to their level of development. However, equality must be in giving love, the possibility of space for self-expression, in just law and in observing agreed rules. In schoolpracticeaccording to Hanuliaková & Porubčanová & Hasajov (2016), thismeansindividualization of the educational process.

It is teaching tailor-made for individual students, adapting to the needs and interests of the student, in a differentiated approach and differentiated learning materials, to himself and for himself in the most effective way and pace, to provide him with a method through which he can get the most, so sothat he canwork at the level of his personal maximum. The teacher must be able to diagnose the needs of the student or group of students and flexibly adapt his / her teaching to them. So it is a teaching that is very adapted to the student, not the teacher. Approaches to our education are extremely topical in teaching. Humanistic traditions are reviving and we are reaching for work on this issue. An important and stimulating work on humanization in teaching are works by Zelin and otherauthors, e.g. Grace and Mihalik. It is

thus a transformation of the school and we return to J. A. Komenský: „To maketheschool a workshop of humanity" (Pirohová & Lukáč, 2020).

2. Humanization of education and training as a way to effective education

Careful study of the principles and techniques of humanistic education, but especially their confrontation with the hitherto customary practice in schools, leads to the need to change theatmosphere of theschool (Petlák, 2000, p. 99). There are teachers who truly understand and pay attention to their work and school in terms of requirements as a workshop of humanity. Humanistic approaches to teaching cannot be about the work of the individual teacher, but about applying these approaches:

● Change or understanding and defining multiple relationships. These are mainly teacher-student relationships, in which the superiority and power of the teacher do not dominate, but mutual partnerships with a high degree of respect for the student. Humanistic relations are also reflected in a new understanding of the position of the school and the teacher in it, while their autonomy is increasingly being talked about;

● Respect for the rights of the child and hiseducationforhumanrights, i. lead him to express opinions, attitudes to things and phenomena, teach him to tolerate others, etc .;

● Creatinganoptimalclassroomclimate, i. pleasant working environment, mutual respect between teacher and students, but also students to each other. Understanding and influencing the climate is a permanent part of a teacher's work;

● Supporting students' independence, creating space for their imaginativeness, enabling active involvement in the course of the teaching process, in its planning, etc .;

● Relieving students of the fear of mistakes and errors. These are part of every human activity. The humanistic approach is not punishment for mistakes, but their analysis, finding ways to eliminate them and avoid them;

● Do not overburden students, especially by memorizing knowledge. Instead, apply students' creative learning methods, apply knowledge in new, changedconditions, iepreventmemoryoverload, and further develop their cognitive area;

● Make more use of students' own, internalmotivation, i. to learn not from coercion, orders, but from one's own interest. The teacher should use the interests of the student, his sphere of experience, etc., last but not least, the management of teaching with the above approaches is motivating;

● Limited sovereign status of the textbook. This means that in the learning activity it is not possible to suffice only with the textbook, but it must also be supplemented by other sources of knowledge so that the student can express his feelings, attitudes, opinions, experiences, etc. it is therefore not just a matter of reproducing the curriculum, but also of working and using various encyclopedias, dictionaries, listing the essentials, comparing opinions, etc .;

● Eliminate fear of lessons. We know that the traditional understanding of a lesson is understood as a closed period of time in which the curriculum is explained, consolidated, but also tested. Several activities and requirements are prescribed by the teacher, often normatively, often at the beginning of the lesson. The sheer number of requirements can stress some students, raise concerns about whether they will be able to meet everything, whether they will be successful in the exam, etc. the humanistic approach requires the creation of a peaceful atmosphere, the creation of a favorable emotional interaction between the teacher and the students, the adaptation of the stages of the lesson to the possibilities and abilities of the students, not creating feelings of fear and failure in examinations, etc.;

- While the traditional approach to teaching emphasizes performance, the humanistic approach focuses on the interest of teaching for students, its educational values and the experiential sphere of the student. In practice, this means e.g. talk to students about how they work, how their curriculum interests them, where they met him, how they can use it and so on. It also means creating space for students to act, not to disturb them at work, but also not to unnecessarily „stretch" time if the goals have been met, etc. In the practice of schools, especially in Western Europe, project teaching, epoch teaching, etc.

- Special attention is required for students with lower grades. Research confirms that teachers are more favorable to better students (they praise them more often, they overlook minor shortcomings, they criticize them less, etc.). The humanistic approach to weaker students requires not to overlook their shortcomings, but more often to encourage them, to positively evaluate even the smallest progress, to increase their aspirations, to cultivate in them faith in one's own strengths and abilities, etc. In addition to verbal communication, non-verbal communication also plays a great role and significance – a consistent smile with the pupil's action, in younger pupils also a caress, encouraging gestures, etc.;

- Developing evaluation thinking is also part of the school's humanization strategy. The aim is for the student to learn to know himself, to evaluate himself, to create a value orientation. To achieve this, it must have a space for expressing their opinions, feelings. Evaluative thinking can be focused – logically, emotionally, ethically;

- Creativity also belongs to humanistic approaches. Creativity significantly humanizes the school, because it allows each student to express their ideas, it allows him to be independent. Providing space for creativity, especially space for a divergent (different, different, non-traditional) solution, has a retroactive effect, resp. supports learning, arouses interest, efforts to overcome the unknown, etc. (Petlák, 2000; Oberuč & Zapletal, 2017; Tamášová, 2007). Humanistic approaches in teaching also depend on the personality of the teacher. Even if the chosen methods are fantastically elaborated and the techniques mastered, optimal results will not be achieved unless they become a permanent part of the teacher's approach to students. In virtually all aspects, humanization intervenes in the upbringing and education of students. Classical teaching is still a continuous teaching in our country and it will take several years for fundamental changes to take place, because certain traditions work, economic factors also play a role (eg thenumber of pupils in classes), etc. However, the consistent application of humanistic approaches fundamentally changes the „spirit" of the school and, by its nature, thuscontributes to thetransformation (Veteška, 2013, 2008).

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Throughout human existence, humans have experienced many pandemics, and although some of them have been much more deadly, this has the greatest impact on human lives so far. Many people had to stay at home, either because of the „lockdown" or because they lost their jobs and ended up unemployed. Students and pupils had to leave their schools and study from home through online classes. Many households have lost most of their income, people are suffering from depression and anxiety and are experiencing an existential crisis. This is exactly what the epidemic brought to China in November 2019 and in March 2020 to Slovakia called Covid-19.

This name is likely to be remembered by many people who will share these memorable moments with their future families. People do not realize how fast time passes until they look back on what they have survived and find out how much time has actually passed and this pandemic is no exception. The media kept us informed about a new viruscalledcoronavirus, whichcanalsobefatal. Few of us believed that the virus would spread throughout Asia or even the world. In our state, people could not imagine living in restraint, following certain rules, or wearing veils.

Fortunately, the Ministry of Education was able to invent and, as in other countries, the whole education system in our country switched to online teaching. But no one knew what it would all bring. The company assumes that almost every pupil and student owns at least one electronic device, whether a mobile phone, tablet, laptop or computer. Unfortunately, there are also those who do not have this convenience, and here is the first problem of online education. Another problem was the great pressure on parents. In the imagination of an ordinary human day, the child goes to school, where he is devoted to pedagogical staff, while the parent can fully concentrate on his work. In this case, however, this was not possible.

Parents had to take work leave to help their child learn online, especially with electronic devices. However, there was also pressure on teachers, as they were also expected to do work they were not used to. Explaining the material to the camera is not easy and you do not know if you have the full attention of students. But what about high schools and colleges? As high school and college students are more independent and independent, it was a little easier, but it was still something new and unusual. A constant problem with the internet connection, trying many video applications, but probably the worst thing was to get used to isolation. Over time, however, we have adapted to this approach, as it was clear that this situation would bother us a little longer than we had imagined.

In connection with the subject matter, we focused on finding out the respondents' opinions regarding the current teaching via the Internet. In the first survey, which involved a total of 216 respondents, 89 students and 127 high school students, we found out whether teachers

can convey the curriculum in a comprehensible way through online teaching. In the results, we met with all answers, but mainly with positive ones, the answer „rather yes than no" was marked by 42.5 % or the answer „definitely yes" was marked by 28.7 % of respondents. In our survey, there were also answers „rather than yes" (15 %).

Rare answers were also „I don't know" 9.2 % or „definitely not" (4.6 %). If we look again at the gender distribution of responses, the results were different, but the girls were more critical in terms of comprehensibility and mediating the curriculum. In boys, the answer most often occurred yes rather than no, where this answer was marked by 41 % of them, then the answer „definitely yes" appeared, which was marked by 35.9 % of boys. The answers of the girls were more diverse, but again the answer „yes rather than no" prevailed, where this answer was marked by 43.8 % of girls. 22.9 % of girls answered „definitely yes" and 20.8 % of girls answered „rather than yes". We also asked respondents whether teaching via Internet communication meets the required learning objectives of individual lessons.

The results of the answers were positive rather than negative. The most marked answer was „yes rather than no" (54 %). As many as 29.9 % of respondents agreed with the answer „definitely yes". 10.3 % of respondents chose the option „I don't know". The least marked answer was the answer „rather than yes" (5.8 %). For the given issue related to the fulfillment of the objectives of the lesson, the answer „no" was not chosen by any of the interviewed pupils. Regarding the gender distribution, the answers were roughly the same here, as 48.7 % of boys and 58.3 % of girls chose the answer „yes rather than no". The answer „definitely yes" occurred in 33.3 % of boys and 27.1 % and girls. 10.3 % of boys and 10.4 % of girls indicated the „don't know" option. 7.7 % of boys and 4.2 % of girls agreed with the option „rather than yes".

Conclusion

The whole world is still paralyzed by this virus and it is only a matter of time before what comes next.Sincethecoronavirus has beenwithusfor almost 9 months and has changed the lives of many people, we have learned to live with it because the only way to cope is to adapt life to these conditions and accept work and teaching from home.

We must be considerate of other people and support each other as we have so far.If we are responsible and follow the rules, we can hope that the next school semester, semester and the whole year 2021 will begin with the life we have all been used to, in schools, in the workplace, without restrictions.

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Changes in adult learning in the digital age

Premeny vzdelávania dospelých v digitálnom veku

Gabriela Petrová, Alžbeta Žitňanská, Marianna Müller de Morais, Nina Kellerová

Abstract:

New technologies, multimedia and Computer systems are a progressive phenomenon of nowadays. More and more often is emphasized their potential, in order to raise the effectivity, resolution and individualization of learning. New media and its technical refinement should not be used just for projecting more powerful and effective ways of educational process, but also should be aimed for the mutual communication, which is recently an important (and many times the one and only) contact with the surrounding environment. The report is clarifying the key competences of the adults, working with modern information technology. It is referring to the needs and necessity of further education in the field, via which it is possible to expand and facilitate the access to the educational possibilities of the adults.

Key words:

Lifelong learning, adult learning, adult, digital technologies, digital literacy.

Introduction

Social and technological trends of the new age have been imposing requirements on the work with different types of information, not just textual and graphical, but also audio, video and animated information. With the utilization of new information technologies (mobile phones, Internet), the perspectives have been broadening special form of social communication between the people and expanding their communicative skills to the new technological level. The forms of communication founded on ISIC, Messenger, ICQ or the text messages based on the mobile communication technologies, are a substance of the interactive communication technology. Participation on the message exchange– being an active communicator– is not just a technical possibility, but also the ethical imperative of the specific community, also known as the chat community.

New technological possibilities of virtual communication are quickly transformed into social ambit (into new type of social relationships between the members of the communication), as well as into the educational space. As it is listed by Kollár, Polakovič, & Gasperová (2015) a participation in the societal functioning, job, employment, education, leisure and many other spheres of our society are more and more digitalized. Meaning that the information and also other services are obtained more frequently via the Internet. If we want to participate in social and economic life, the competences in the field of the digital information and technologies are the basic prerequisite. Moreover, those are the cross– section competences that help us adopt other key competences, such as communication, language skills or skills in other sciences.

We can observe that the COVID 19 Pandemic has amplified the informatization and dig-

italization progress. We are forced to face the "in media res" situations very promptly, solve flexibly and predict the unpredictable. Certainly, no one had planned anything that has happened in the field of education: Home Office for educators, educands, obligatory quarantine, distance education (online and offline). With the fear of illness lying in the background of it all, paralyzing the whole society (Müller de Morais & Papp, 2020).

According to Ostertágová & Čokyna (2020) a closure of the schools and forced transition to distance education due to pandemic was, at least in the history of modern Slovak schooling, an unprecedented situation. Based on the results of the survey, in most of the cases, the schools were able to commence the transition to distance education within one week and capable of providing at least partial substitution to regular tuition for the most of their pupils (e.g., according to estimation of the schools, to the online tuition had an access almost 565 000 pupils that is 81,5 % of the pupilar population).

Considering the time circumstances and the overall conditions, we agree with the statement of the authors Ostertágová & Čokyna (2020) that in the terms of the possibilities, many schools have managed the situation well. But at the same time, it also indicated multiple problems that have arisen as consequences, when thousands of pupils were not involved in the distance learning or they had access to education in a limited or ineffective form. Educands had problems while working with technology and educators did not have a proper high-speed Internet connection. Even though the distance education (both online and offline) in comparison to present form, was considered as less effective by the educators, the online education was considered more effective than its offline form.

On the other hand, in a case there were further school closures, the necessity of education was declared by 80 % of the involved educators, whereby the most demanded field were technical skills (54,3 %) followed by pedagogical, didactical and organizational aspects of remote education (35,5 %) and regarding the distance teaching of the learners with special educational needs (22,2 %). The older research (Kalaš, 2013) acknowledged that the biggest concern of the educators is a potential shame, caused by inability to practically use the digital technologies, equipment or software in front of their students.

We can agree upon the fact that distance learning, as well as other multimedia forms of guided studies, are enabling the expansion of recognised knowledge and offer the access, as Průcha & Míka (2002) are claiming, the second chance for adult learning. On the other side, there is a necessary requirement for the "new" competences, in order to work with digital technologies, but also the attainability of the technology in the 21st century (Veteška et al., 2021; Svobodová, Kursch, Veteška, 2021). An unfolding question from the educator's side is how much he is willing to use the available sources, materials and his own creativity before all, to make the digital educational process interesting in any age.

1. Potential of the new technologies in the adult learning

In the recent times, we have been going through the situation in which, on the one hand, the value of new media is widely accepted (in the contemporary age it is considered as matchless and indisputable). But on the other hand, in the practice, is the potential of new media not as widely utilized as it could be, especially by the older generation. As the main causes of the status quo, we can appoint the limited access to multimedia tools (from the aspects of financial resources), insufficient technical proficiency and involvement.

Last but not least is a fact that at the time of a productive age of the older people, the advantages and exceptional possibilities of media were only discussed and were introduced into practice much later. Connectedly, Kalaš (2013) agrees that digital technologies are one of the

causalities and at the same time tools and consequences of the global societal and technological changes that skyrocketed in the second half of the 20th century.

We are living in the revolutionary age of information, as Veteška (2016) states it, the main milestones were marked by a formation of microcomputers (80s of 20th century), expansion of the Internet (90s of 20th century) and rapid growth in the utilisation of social networks, in the first decade of 21st century. Trilling and Fadel (cited by Kalaš, 2013) are talking about four powers that are pulling us like a coach, whether we like it or not and they are: different world of work (jobs are requiring a constant education, new skills, creativity, ability to quickly adapt, etc.), cognitive tools(there are new technologies available that support reasoning, providing a great potential, but also many problems at the same time), different life (not just the young people live the digital lifestyle, but our whole life has changed, the way how we organize it is different, how we communicate, entertain ourselves, our own presentation is different), recognition of the world (today we know much more about how we learn, what is important for the cognitive process); we already know that the inevitable condition of cognitive process is the inner motivation and we recognise different learning styles and multiple intelligences; we got to know the social aspect of the cognitive process.

These powers are requesting an inevitably big change in the education. We remark that practically, no one is doubting today the foundation of new technologies in the education. Their utilization can be observed not just in the school environment, but also in the adult learning. Besides the distance learning, we also mention, for example, the so called "Blended learning" which is an educational form that is based on the combined (mixed) studies. The significance of blended learning is according to Eger (2004) a connection of E-learning and daily forms of studies, which is proven to be more effective and at the same time it removes the shortcomings of explicitly E-learning courses.

Mixed learning makes it possible to achieve higher effectivity of education mostly there, where we do not want the participants of education to just quickly pass the basic course information, but acquire the skills, experiences and really become motivated to execute practical activity. Another advantage is the possibility of different variations of combinations, for example the E-learning course in LMS (Learning Management System) is forwarding the basic information to participants of education, followed by basic control of knowledge, which is together with electronic communication, enhanced by attended seminars or evaluated assessment. Considering the training of the skills, a controlled practice or summer school can be established.

Veteška (2011) is listing other combinations that are applicable for the adult learning with utilization of the information and communications technologies, for example the workshops and seminars connected with teleconferences, courses that use an e-mail supporting the dialogues between participants (Facebook, Badoo, chat and others) and professional portals supporting the dialogue between the participants, seminars complemented by the live TV broadcast and other combinations. This comprehension of the blended learning, as specific (advanced or "successional") form of education, combines the advantages of present (interactive) tuition with different options of technological tools that cannot just "supplement" the tuition, but complement it before all, with other learning approaches. Its utilization, for example, in the development of company learning, more closely describe Tureckiová & Veteška (2011), Eger (2004), Veteška et al. (2020) and others; in the connection with a return of investment into education, they list 30-40% of financial savings, while using the blended learning compared to present form of corporate education.

Another expanding form of the adult learning is Edutainment, the education via entertainment. It is considered as a field of new educational media and technologies that should

mitigate the learning via implementing the principles of game, as well as discovery, competition, visual and audio experience or other entertaining educational means (e.g., interactive electronic encyclopaedias, multimedia timeline of history, nature and others) (Průcha, 2003). The advantage of the subject form of education is that via the educational entertainment, the adults gain knowledge and information from different fields of life and besides enriching their cognition level, it is also possible to influence their opinions, views and value orientation.

Based on a metastudy, Kursch (2020) states that in the last decade, a lot of attention has been dedicated to digitalization of the educational methods. Between three methods of the fastest digitalization in the adult learning, he lists open courses (MOOC, specific open courses, educational academies and others), personalized learning (personalisation of the online education by the means of interactive elements, with the elements of self-paced learning, with an emphasis on own-paced learning etc.) and gamification (exercitation of gaming principles in the education). The fastest growing trend, in the field of educational and learning support, occurs to be the gamification, being a part of the connection process with the virtual reality. It is appearing in all forms of education and in the age of digitalization, we can see its elements in all areas. It enhances the attractivity of the offered educational programmes, as Veteška (2016) states, it interconnects the knowledge from gaming design, traditional marketing and behavioural psychology.

Most probably, all mentioned trends will influence lifelong learning and further research in this field. Research of advantages, but also deficiencies, can lead to continuous improvement of digital educational methods (Kursch, 2020). As we can observe, current trends in the adult learning, which enable the state-of-the-art technologies are not only concerning the education in the organizations (for example, corporate online courses, Cloud LMS, gamification, personalized learning, micro-courses, online seminars and conferences, social networks, online cooperation etc.), but also self-education (for example, mobile learning, augmented learning, social networks, online courses, schools, universities, public online academies, online cooperation, online encyclopaedias, libraries, documents, some computer games, video-lectures and others).

Individual trends from both groups are intervening and enable the expansion of education, by means of new methods and procedures, utilizing all the advantages that bring the modern digital technologies (Veteška, 2016). To achieve higher effectivity and interest in the adult digital learning at different age, there are imposed requirements on lecturer's self-learning skills and capability to integrate the factors which influence the ability to learn, ranging from the environment (light, sounds, etc.) physiological factors (perception, time, movement, energetic intake) via feelings (responsibility, motivation, persistence in solutions, multitasking) psychological factors (analytical thinking, impulsive versus deliberate action, learning styles, etc.) to social factors (I, couple, companions, adults and other people influencing learning). Even though for younger generation, the studies in the virtual space may be more accessible and much more attractive way of learning than the traditional institutionalized daily form, it can also get problematic, especially for the participants of the education without stable digital literacy.

2. Information, computer and digital literacy as key competence of nowadays

The active usage of the new technologies requires appropriate competences. We are talking about information-technical competences or competences in the field of digital and technological information that appoint according to Ľapinová (2016, p. 12) "critical utilisation of technology of the information society at work, free time and for communication". Involving the exercitation of the information and communication technologies in a daily life and at the

same time a preparation for the new forms of education (E-learning, distance learning, etc.) based on the new digital educational tools, before all.

Obviously, also in the terminology prevails certain disunity and various authors use different terms, in order to describe the same facts (Kollár, Polakovič, & Gasperová, 2015). The disagreement over the nomenclature of the technological tools that functionally support the individual's competences in the digital technologies and information, is caused by the individual's view on the term (Weiszerová, 2014). Currently, the exerted term is Digital technology, as well as Information and Communication technologies (also known as Digital media).

In our article we are considering the work of Weiszerová (2014) who divides the subject competences into three areas: information literacy (the ability and skill to localize different sources, e.g., computer ones, which contain the necessary information, searching for the necessary information in these sources, be able to critically evaluate the information; solve the problems via the obtained information, intervene the information in different ways that means: in the direct communication or via ICT), Computer literacy (skills and abilities, such as, how to use a personal computer and work with the files of data, work with the PC text editor, create and work with the PC database, create the PC presentations, gain information and communicate via PC, work with the Internet, create websites, use the electronic mail, social networks and others), and digital literacy (the ability to understand information and use it in different formats from different sources that are presented via ICT or others).

The importance of new technologies in the 21st century education is incontestable. Information, computer and digital literacy has become one of the key competences of the educated people of nowadays, not just in the general educational level, but more specifically on the professional level (Ľapinová, 2016). The preparation of the wide layers of population for using the modern information and communications technologies, appears to be one of the key prerequisites for the adjustment to social changes. However, certain researches warn that in the background of the societal informatization processes might occur a new split in the society. On the one side, are those who have access to modern information and communication technologies and possess different levels of proficiency in the computer literacy, while on the other side are those who do not.

This phenomenon is also marked as "digital divide" or "digital gap". Ultimately, the phenomenon can exaggerate the concepts supporting the radical political solutions (https://euractiv.sk/section/vzdelanie/linksdossier/-digitalna-gramotnost/). Kalaš (2013) indicates that mostly middle and older generation nowadays, is suffering from the phenomenon called the digital gap. Divergent views on new technologies and different experiences and skills, are building immense barriers between generations, poor and rich areas or countries, as well as between the family members. Some of them are deliberately working on their overcoming, others are more or less giving up, while saying that they do not like the computers, they do not need them or do not find them suitable for their work.

Admittedly, current society needs to react to the fact that multimedia and new technologies are becoming inseparable part of life and in broad-spectrum have been influencing the processes of lifelong education. If the adult participants are supposed to consciously utilize the new media in their life, they need to possess necessary theoretical and technical knowledge and skills. Like Kollár, Polakovič, & Gasperová (2015) are listing that between the people with digital literacy and those who are not using digital technologies, or they have low level of digital literacy, exists a metaphorical digital gap. People can belong to the group of digitally included or digitally excluded.

Digital integration does not need to mean a bigger social success or higher life quality. On the contrary, exceeded utilization of the information-communications technologies might lead

to the addiction on the Internet, health problems, attention disorders or other problems. We agree that the expansion of digital literacy itself, neither guarantees new quality of life nor balance of the societal, economic, social or political differences and solutions of the social problems. The key questions are that for what aims, and purposes will the literacy (information, computer, digital) be used. In other words, what will be their value and content. It is probable that raising the level of subject literacies will transfer certain social occurrences into virtual forms. For example, science and research, but also economics, politics (and others) can in their "electronic form" acquire other influence, content and form.

Very probable is also the conflict between real daily life and virtual-reality life, which can invoke broader discussion about (philosophical, moral, ethical, cultural, religious, legal, political, etc.) questions of the society. All those are serious questions, which require answers in order to achieve the information society (https://euractiv.sk/section/vzdelanie/linksdossier/digitalna-gramotnost/). At the same time Gálik (2014) is warning that the Internet, for which is characteristic hypertextual, also known as rhizomatic connection of information, will not support abstract, linear and logical thinking, which is directly bridged to sense loss of past and future. The image of linear time is broken down together with linear thinking. Whereas in the Internet communication, do not exist the physical stable– points, which would allow counting the time, so spending time on the Internet is becoming simultaneous. Hypertextual nonlinear connection of the information (for which is distinctive that it does not have a beginning, nor an end) also supports the contemporariness of the time.

The perception and experience are reflected into perception of the culture, which is not forwarded by traditions, but via hypertextual way has become the part of presence. This all can present the risk for sciential society. Besides the other risks, considering Hockicková & Hašková (2004), another major inquiry is media education and forming the media competences so that the contemporary human can critically evaluate the potential of new media. Accordingly, the individual should broaden his skills while working with the information, in order to be competent in interpreting the media content, which is transferred to him via information channels so that he can select wisely a valuable content from the media offer.

Moreover, the individual should be aware of his own interests and overlook the interests of the media owners, as well as he should critically evaluate the information in the media. At the same time, we agree (https://medialnavychova.sk/) that new literacies show in wider context, the important areas based on decades of work, constantly developing information environment which is surrounding both adults and young people. The importance of literacy is gaining its significance together with progressing information society, requiring further innovations in the research and practice.

Their importance and eligibility are growing in direct proportion to constant progress of new technologies and quickly proceeding societal changes. In 2019, regardless the current situation, was executed a research under the leadership of G. Petrová (Žitňanská, 2019) between the adult population, aimed at the information gain via media. Author's ambition was to find out the preferred media, in the leisure learning of adults in the individual age categories. A central assumption was that according to the age exist differences between the media preferences. Based on the fact that in the research were included different age categories, also different media was used (a radio and broadcast, a television, the Internet in the mobile phone, Internet in the computer, periodicals and magazines).

Methods and research group

The research group was based on 83 respondents from Bratislava. Concerning the participants in the research, there were 60 % of women and 40 % of men. Regarding the age com-

position of the research group, the majority of the respondents 52 %, were in the age group of 20–40 years. The following age category was 41–50 years old, participating with 17 % and the age group 60 and above, participated with 13 %.

Materials and equipment

Within the scope of the executed research, was administered the authorial electronic questionnaire (Žitňanská, 2019), with which were detected: demographic data concerning the respondents, preference of the preferred technologies and multimedia, where they were gaining the information– technological competences; the need to learn more about the area of ICT that are the skills, which are according to them the respondents lacking and the necessity of the information verification from the source.

Methodology of the data analyses

The methods of the statistical processing were descriptive statistics, inference statistics (to detect the potential relation between the media preference and age groups Chi– square test of homogeneity (χ^2). The elaborated data was analysed with statistic programme R.

3. Results

The utilization, according to preferences for gaining the information between individual age categories, is depicted in the graph 1.

Graph 1: Utilization of radio and broadcast according to the age
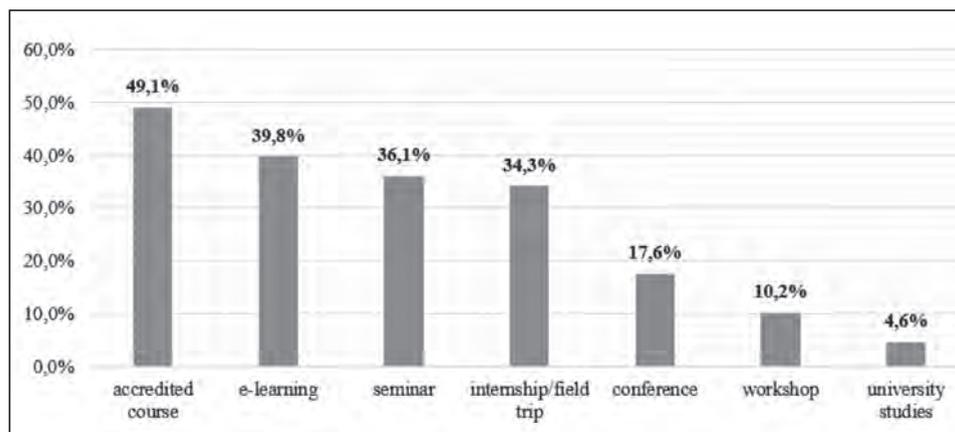
Resource: own elaboration

Based on the graph, is evident that radio was the most widely used medium for the information gain in the group of 51–60 years old people, followed by the group above 60 years and group of 41–50 years old. The group of people between 20–40 years is utilizing radio as the least preferred medium for the information gain. To validate the potential dependency between the preference and the age groups, Chi– square test was applied.

Based on the results ($\chi^2 = 24.7976$, p = 0.0158, *p < 0.05) we can affirm that there is a considerable dependency between the age groups and the utilization of radio and broadcast as a preferred medium. Another medium, included in the research, was television and the preferences are described in the graph 2.

Graph 2: Utilization of television according to the age
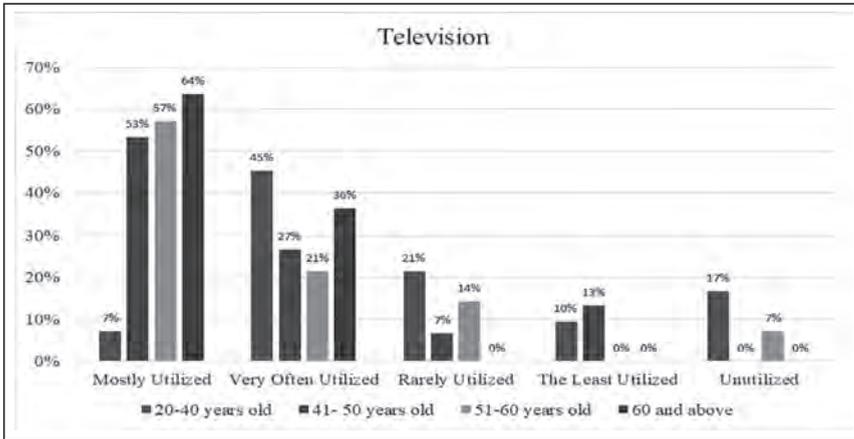
Resource: own elaboration

Based on the graph 2, we can see that there are significant differences between the utilization of the television, as a preferred medium for the information gain. All the age categories above 41 years stated that television is a preferred medium with a value above 50% of the utilization. The group of 20–40 years old uses this medium as least preferred medium for the information gain.

Here we could also expect certain amount of dependency between the preference of television and the age groups. The results ($\chi 2 = 29.8687$, $p = 0.0029$, $**p < 0.01$) also acknowledged the existence of the significant relation between the age group and utilization of the television as a preferred medium for the information gain. Internet in the mobile phone was included as another source of the information gain and graph 3 is showing the preferences according to the age groups.

Graph 3: Utilization of the internet in the mobile phone according to the age
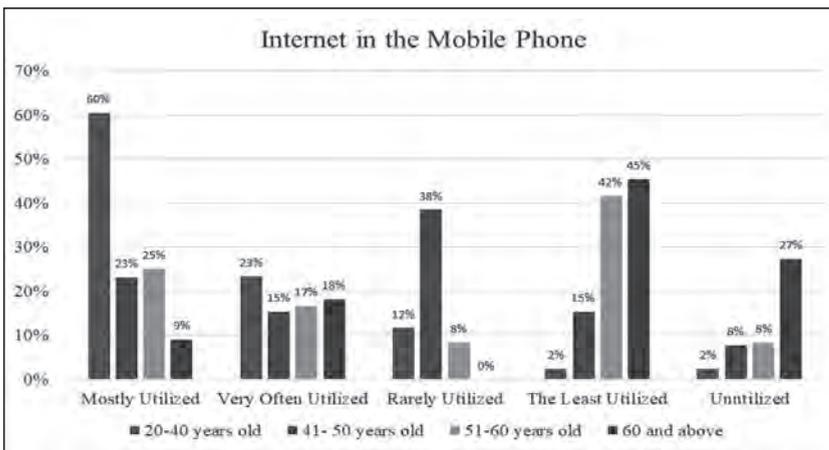
Resource: own elaboration

Based on the graph 3, we can see that the age group between 20–40 years old is showing an explicit utilization of the information gain, comparing to the other categories. The mentioned group is disclosing almost 60 % of the utilization of mobile phone, as the most common source. Other categories utilize the medium just minimally.

The existence of dependency between utilization of the Internet in mobile phone, as preferred medium and age category, was confirmed by the test result ($\chi^2 = 39.0052$, p = 0.0001, ***p < 0.001). The observed dependency was highly significant. The information gain from the computer and its preferences are depicted in graph 4.

Graph 4: Utilization of the internet in computer according to the age
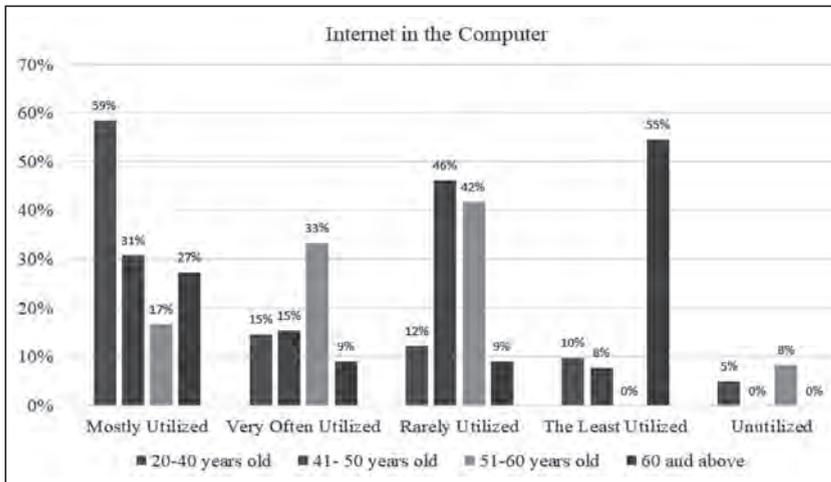
Resource: own elaboration

Similarly, to the utilization of the Internet in mobile phone, also while using computer, there were detected differences between the age groups. The group up to 40 years old, indicated slightly higher values in preferences of the computer use, than the utilization of mobile phone. Even though, there was detected higher utilization between the other age groups, it is possible to predict that the existence of dependency between computer use and the age group will be verified.

Also, in this case the results ($\chi^2 = 32.7734$, p = 0.0011, **p < 0.01), confirmed the existence of significant relation between the Internet use in computer, as preferred medium and the age groups. The medium examined as last, was the category Periodicals, Magazines and frequentness of the utilization of media between the age groups, is depicted in the graph 5.

Graph 5: Utilization of the periodicals and magazines according to the age
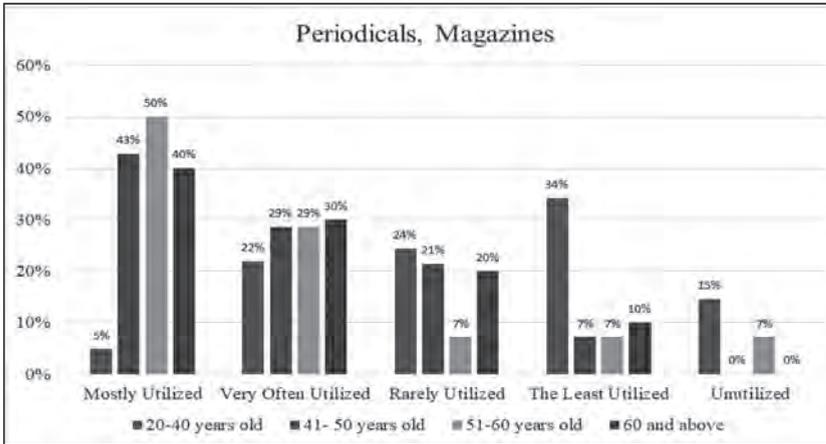
Resource: own elaboration

Similarly, to classic media (broadcast, radio, television) also in the case of periodicals and magazines, dominated the groups above 41 years old and in the group of 20-41 years old, was detected only minimal use of this type of media. The existence of a significant relation of the media utilization, between the age groups, was verified by testing ($\chi^2 = 25.2936$, $p = 0.01349$, *$p < 0.05$).

4. Discussion

The research has shown that the groups above 41 years old prefer classic types of media, radio and television for the information gain. The dominant status of television in the structure of media technology, is also confirmed by the results of a research executed by Vrabec (2014) who claims that it is connected to its availability, whether it is technological, financial or cultural aspect. Television, as a traditional medium, serves mostly for filling up the free time, but also to large extent, as an important source of information and a socialisation factor.

The adult group of 20–40 years old, has shown a considerable orientation towards electronic media, such as Internet in the computer and mobile phone. At the same time, there were detected the differences concerning the media periodicals, magazines, with dominating age groups above 41 years old. In another research (Vrabec, 2014), was detected a fact that the utilization of the Internet is raising in proportion to descending age of respondents. Another detection was regarding the daily Internet access, which achieved a level of almost 43%. Concerning the consequences, it is apparent that the mobile communication is acting more and more important role in the daily life and media practice of the adult population.

Niehaves & Plattfaut (2014) are supporting the view that while the digital technologies have been becoming more expanded, not using the Internet in connection with the age is observable. For example, with the older people, the probability of not using the Internet is much higher than in the average population. This digital gap connected to the age, is preventing many older people from using the digital technologies in order to improve life quality by the means, such as providing the services on the Internet. Between the other groups, the older people are lagging behind in utilization and advantages of digital technologies in general, but mostly the Internet.

However, the utilization of the Internet and technologies, offers to older people a significant

potential to stay independent for a longer period of time, also contributes to lowering of social isolation, enables the communication with friends and family and increase of the life quality. Despite these advantages, a visible digital gap connected to the age is persisting. The digital gap signifies that despite all the potential advantages, with the older people there is smaller probability to access the potential of the Internet utilization and digital technologies use in general, which can have a bearing on the hesitation in perception of a concrete technology.

The actual research (Koricina, 2020) refers to the need of older adults (in pre-senior age) to learn or improve in foreign language (8%) and also to gain the digital skills, while using the computer, smartphone and electronic services of the state (8,9%). Simultaneously he claims that the education on a healthy lifestyle, financial skills, time management and digital skills, must form the key pillars of the pre-senior educational programmes and their content has to be adjusted to the age, as well as contemporary needs of the older adults (see the educational programme 55Plus).

According to the opinions of respondents (Žitňanská, 2019) that where they have gained the information-communication competences, was detected that the most of them (55%) are orientating towards self-growth through self-education in the described field. 23% of the respondents admitted that their information-communication competences were gained in the educational institution, 11% of respondents gained it in the further education and 9% of the respondents stated that based on their work with technologies and daily practice, they have been expanding their knowledge continually in their employment. Skills, which the respondents were lacking while working with the Internet were listed in the following order: critical thinking, patience.

It was detected that the Internet represents the most widely used medium in the category of younger people, as the skills needed for the utilization of the Internet they valued as adequate. That is supported by the results of the Programme for the International Assessment of Adult Competences PIAAC (Sklenárová, 2015), where almost all of the respondents (95%) stated that they have skills necessary for the computer use at their work and did not assume that the lack of skills has been influencing their career. From the results, is also apparent that the success in domain problem solving in technically developed environment, significantly underlay the utilization of information-communication skills at home and at work.

The more information-communication skills were the adults using at work, the more successful they were not just in the domain of problem solving, but also in the domain such as mathematical literacy and reading literacy. The need for further education was detected (Žitňanská, 2019), in the group of respondents above 41 years, as they found the big amount of information disorientating. They would broaden their skills in the area of programme, applications and software proficiency, knowledge of English language and practical– technical skills when working with computer.

Similarly, the OECD (2020) is pointing out the low degree of IT skills utilization, which is in Slovakia until certain level, connected to globally low standard of digital skills of the Slovak adults (Eurostat, 2019, cited by OECD, 2020). Although already 85% of citizens in the EU used the internet in 2019, the development of digital skills does not come automatically with increased utilization. The percentage of people having, at least basic digital skills, went up slightly from 55% in 2015, to 58% in 2019. A large part of the EU population, however, still lacks basic digital skills, even though most of the jobs require such skills. Digital skills are the backbone of the digital society.

They enable people to use digital services and engage in basic activities online, especially when mobility is restricted. Basic and advanced digital skills need to be strengthened in the school curricula and academic offers in EU countries. Similarly, digital skills are also essen-

tial for the effective use of solutions for distance learning, including support to schools and families, with particular attention to those at risk of social exclusion (Digital Economy and Society Index, 2020). The Frame of the Digital Competences can help with self-evaluation, determining the learning aims, identification of the possibilities of professional preparation and with convenience of the job search (Clifford, 2020). As it is stated in OECD (2020), the skills are inevitable part of responds to challenges and utilization of possibilities connected to demographic changes, digitalization and globalization. The automatization of workplaces presents a serious challenge for Slovakia, digital innovations, such as machine learning, big data or artificial intelligence, will change the character of many workplaces and transform the execution of different working tasks in the future.

The findings of OECD, based on the results of the International Survey of Adult Skills indicate that approximately 34% of the employees in Slovak republic, is seriously endangered by the automation of their work position, while the other 31% can expect accentuated changes in execution of their working tasks (Nedelkoska & Quintini, 2018, cited by OECD, 2020). Whether and how (Žitňanská, 2019), the respondents verify the answers from the resources, is also considered as important. Accordingly, it is apparent from the utterances that most often the adults were verifying the information, only when they were suspicious that the answer was incorrect. The second most listed answer of the respondents was that they read from the verified sources. As the most reliable medium, the adults appointed television, radio, the Internet and magazines, as the last one.

Respondents, who mostly used the Internet claimed that they verify the information with more sources. Based on the answers from the questionnaire, the respondents with University education and advanced Vocational education, utilizing the Internet, can verify the information and also search for other sources. Those respondents, who mostly use the television, radio and broadcast, consider these sources as reliable and that is the reason why they do not feel the urge to verify the information, as much as the respondents who prefer the Internet. Referring to the findings, it is important to propagate via media the educational programmes or discussions, dealing with the problematics of dissemination of disinformation, conspiracy theories and hoaxes.

Admittedly, the dynamic progress of digital technologies and the possibility of the Internet utilization in the media like a mobile phone or computer, represents an effective access to the information, especially for young digital generation. With an expansion of the smartphones, tablets and laptops, has also been ascending the popularity of the online presentations, intelligent applications, educational computer platforms and other study materials in the digital forms. A lot of educational materials and course books have already been available in the digital forms or are published as E-books.

The learners can download them into their smartphones and study while they are executing other activities, such as commuting to educational institution and work, or anywhere they have time and space for it. Emails and social networks are often used, not just for private communication, but also for sharing the study materials and cooperation between individuals while solving the studying/working tasks or projects (for example, the educational platforms Datacamp, Udacity and others). Another research could be aimed at the group of adults at the age of 20-41, who prefer the electronic media. Regarding the electronic media, we can further divide them to reading of the classic magazines or other alternative media (Blog, Youtube and others).

Conclusion

Applying new digital technologies into education has got more advantages and can also

contribute to improving the quality of the educational process. The other point of view is dependence of the educational process on a computer and the Internet. Last but not least, is the preparation of the educational participants and educators for an active utilization of the new technologies. The digital literacy might also be challenging, especially for the older, less educated, economically inactive part of the population, which apparently does not have a sufficient motivation, nor real possibilities to overcome its own delay (https://euractiv.sk/section/vzdelanie/linksdossier/digitalna-gramotnost/).

In the other years, we are able to see more long-term visions, concerning the skills and education, such as Strategy of the Digital Transformation of Slovakia 2030, which is defining the political priorities for the period of the years 2019-2030; in context of challenges connected to digitalization, as well as others (OECD, 2020). The European Commission launched in September 2020, the new Digital Education Action Plan to foster the development of a high performing digital education ecosystem and to enhance digital skills and competences for the digital transformation.

Quite a number of actions deal with the further development of digital competence and the development of a European Digital Skills Certificate (Clifford, 2020). In the context of demographical and technological changes, based on the facts that many adults do not possess the skills necessary for achieving the success in the interconnected digital world (digital skills and abilities to solve the problems) it is advised that Slovakia invests into strengthening of the citizen skills, through improvement of the results from the schools, quality and rewarding of the teachers, strengthening the responsiveness of the educational system, as well as supporting the adult learning and expansion of the business skills.

The culture of lifelong learning is important for maintaining the skills of adult population on the adequate level, in order to be able to adjust to changing demands in the area of skills and at the same time lower the inequalities in the system efficiency (OECD, 2020). Lastly, we would like to emphasize that in the progressive digital age of nowadays, it is important to search for the methods and forms that strengthen the inner motivation of the students and prolong their attention span during the educational process. It is inevitable, to constantly search and adopt the possibilities, via which it is possible to apply the motivational factor into digital age, where the originally used techniques start to be outdated and new ones require wider space for research, assimilation and other utilization in the educational process.

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The experience of an effectiveness of distance education among university students

Zkušenosti z efektivity distančního vzdělávání mezi studenty vysokých škol

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Abstract:

The main goal of this article is to verify an effectiveness of distance learning utilized due to the COVID-19 pandemic and to compare it with an effectiveness of the traditional learning process of full-time and part-time form of study. This research was conducted with a sample of 338 university students. The effectiveness of their study process was observed by a six parameters. It has shown, that the effectiveness of the distance education is compatible with the effectiveness of the traditional form of study.

Key words:

Distance education, blended learning, effectiveness of education, higher education, achievement testing, scaling.

Introduction

In the Czech Republic, most of a university teaching process is conducted within a two main forms of study – in a full-time and a part-time form. Both forms have a different ratio of contact part during the teaching process and different amount of physical presence of students. When it comes for the full-time form of study, the contact part is dominant, and self-study is just an addition. As for the part-time form of study, the contact part is limited, and the accent is put on the individual self-study process. The contact part is therefore not primarily functioning for the transmission of new information, but is serves as a guide during the whole study and it controls the self-taught activities and strategies of students.

There is a global trend, that is steadily getting stronger over the time, which is a transfer to distance forms of education (Tennant, McMullen & Kaczynski, 2009). Using these forms is possible due to a fast development of information and communication technologies, that mediate the distance learning in an on-line environment in the real time (Lowenthal & Wilson, 2010). These two main aspects are also significant for the definition of distance education on universities. Some authors differentiate the concept of "distance learning" and "distance education".

Distance learning is referred as ability, whereas distance education is an activity within the ability (of learning from a distance); though, both definitions are still limited by the differences in time and place (Volery & Lord, 2000). Conrad (2006) introduces other alternative concepts, such as on-line learning, e-Learning, technology, mediated learning, online collaborative learning, virtual learning, web-based learning etc. When we refer to the distance learning

in this thesis, we understand it as a specific organisation form of a learning process, that allows a teacher to teach a large number of students in the real time with a support of specific on-line platforms. We do not include other definitions, such as so-called asynchronous learning, that does not allow direct interaction of a teacher and his/her students (e.g., video-recording, e-learning course, self-study process) (Watts, 2016).

Although the concept of distance learning exists for decades, the biggest impulse for its development and mass implementation on all levels of education system was brought by the COVID-19 pandemic. This change forced a fast development of technical competences and the ability to work with the specific software. Furthermore, the teaching process had to be redesigned to respect different time schedules and it also brought new specific teaching and feedback methods (comp. e.g., Martin, Budhrani & Wang, 2019; Miklošíková & Veteška, 2018; Ozturk, Ozturk & Ozen, R., 2018). There is a need of paying special attention to university students, who just enrolled in the year 2020 and experienced the distance learning (as a part of their first semester). These students had no experience with the full-time university teaching process or with an organisation background of the university. Some authors claim, that huge negatives relate to the distance learning, such as insufficient interaction of a student with his/her teacher, delay in a feedback, absence of an immediate reaction to some stimuli and the absence of socializing processes among the student group (comp. Brown, Hughes, Keppell, Hard & Smith, 2015; Zepke & Leach, 2010).

A possible compromise appears to be the so-called "Blended Learning", that combines both full-time and distance learning features, while trying to synthetize and use its positives. It uses the e-learning environment and contact teaching, that usually has a limited range and is conducted mostly by a form of an introduction tutorial and a final workshop (Dziuban & Moskal, 2011). One of the flaws of the Blended Learning can be its non-systematic (almost chaotic) use, absence of an explicitly specified goal, various quality of distance study materials and primarily the level of its didactic composition. These factors significantly influence so far inconsistent results of the measurement of the effectiveness of Blended Learning (e.g., Tureckiová & Veteška, 2008; Moskal, Dziuban & Hartman, 2013). These negatives do not originate from the concept of the Blended Learning itself, but are a result of a non-systematic work and use of this concept by universities so far (without the consistent quality check during the process and its results).

1. The methodological aspects

The basic research problem, that was solved during this research study, is possible to define as: How does the form of a university study influence the effectiveness of teaching in the methodology of research in education course? This research problem was causal and was solved by the quantitatively oriented research design. The methodology of research in education course was specifically chosen due to its difficulty (it is generally perceived as a hard one by students) and because it requires the self-teaching besides a normal contact teaching. The proper acknowledgement and use of this course's information is also required (e.g.) during the composition of student final thesis.

The effectiveness of the distance learning was measured by the six chosen parameters. They are specifically operationalized in following hypotheses, that were formed as null:

H_1^0: **The results of learning** determined by the gross score of didactic tests of students in full-time, part-time and distance form of study, are all the same.

H_2^0: **The intensity of motivation to learning** determined by a score of the measurement scale of students of full-time, part-time and distance form of study, are all the same.

H_3^0: **The degree of paying attention** determined by a score of the measurement scale of students of full-time, part-time and distance form of study, are all the same.

H_4^0: **The level of feedback** determined by a score of the measurement scale of students of full-time, part-time and distance form of study, are all the same.

H_5^0: **The level of difficulty of self-teaching** determined by a score of the measurement scale of students of full-time, part-time and distance form of study, are all the same

H_6^0: **The estimate of self-success in the study** of the methodology of research in education course, determined by a score of the measurement scale of students of full-time, part-time and distance form of study, are all the same.

These hypotheses were tested by the ANOVA-test due to their interval character of the measured scale. If the null hypothesis was rejected, post-hoc analysis by Turkey HSD test was conducted with a goal of identification of specific statistically significant differences between compared data files. All analysis was conducted on the significance level $\alpha = 0,05$.

The research sample was selected by the available selection out of the statistical population. The participants were university students enrolled in programmes focused on education. The test process took place during the methodology of research in education course. The total size of our research sample was N = 338 respondents. Out of this total number, there were 87 full-time students, 115 part-time students and 136 students of distance form of study. The distance form of study was conducted from October – December 2020 due to a COVID-19 pandemic. The testing using the prepared research tools was conducted in January 2021. The data used for comparison in full-time and part time form of study were obtained from year 2019, when the university restrictions were not yet implemented.

The didactic test and scaling were used as research tools presented in the research study. The gross score of didactic test and each individual scale were used for parameters of a teaching effectiveness. The range of evaluation scales was adjusted to possible values of the didactic test's gross score. Each of the six used parameters of the teaching effectiveness was measured from 1 – 16, so it allows an easy comparison of their achievement.

2. The interpretation of results

Results are presented according to each chosen parameter of the teaching effectiveness. The validity of constructed hypotheses $H_1^0 - H_6^0$ are being verified at the same time. Graphs bellow always show arithmetic diameters and their intervals of reliability resulting from the Tukey HSD test calculations.

Graph 1: The comparison of teaching results
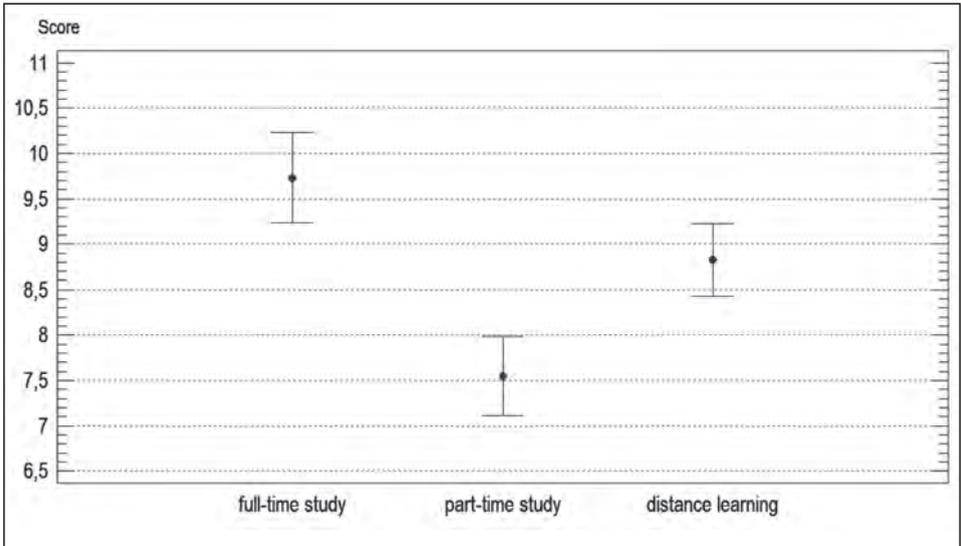
Source: self-processed

The test criteria of the ANOVA-test = 15,74 and the observed level of significance P = 0. The null hypothesis is rejected, the difference between results of the study based on the form of study are statistically significantly different. There are statistically significant differences between all three observed data files according to the post-hoc test. The students of full-time have the best results, the worst belong to the students of part-time study.

Graph 2: The comparison of intensity of the motivation to study
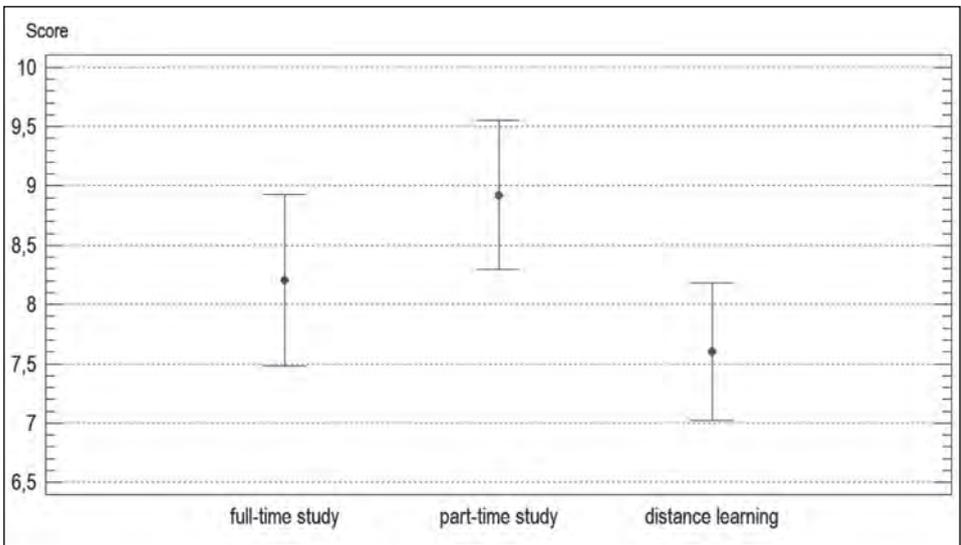
Source: self-procwessed

The test criteria of the ANOVA-test = 3,29 and its observed level of significance P = 0,0385. The null hypothesis is rejected, the difference in the motivation to study based on each form of study is a statistically significantly different. There is a statistically significant difference in the motivation to study/learn among the students of the part-time form and students taught in the distance form based on the conducted post-hoc test.

Graph 3: The comparison of attention rate
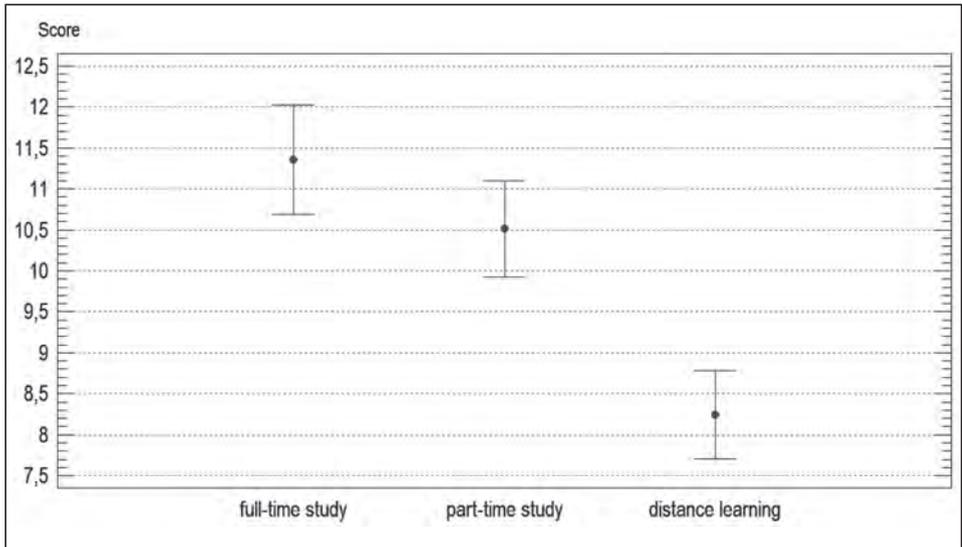
Source: self-processed

The test criteria of the ANOVA-test = 20,97 and its observed level of significance P = 0. The null hypothesis is rejected, the differences in attention rate based on the form of study are statistically significantly different. There is a statistically significant difference in the rate of attention among the students of the distance learning based on results of the post-hoc test. The ones enrolled in distance learning struggle with attention the most. There was no statistically significant difference between the students in the full-time and the part-time form.

Graph 4: The comparison of feedback level
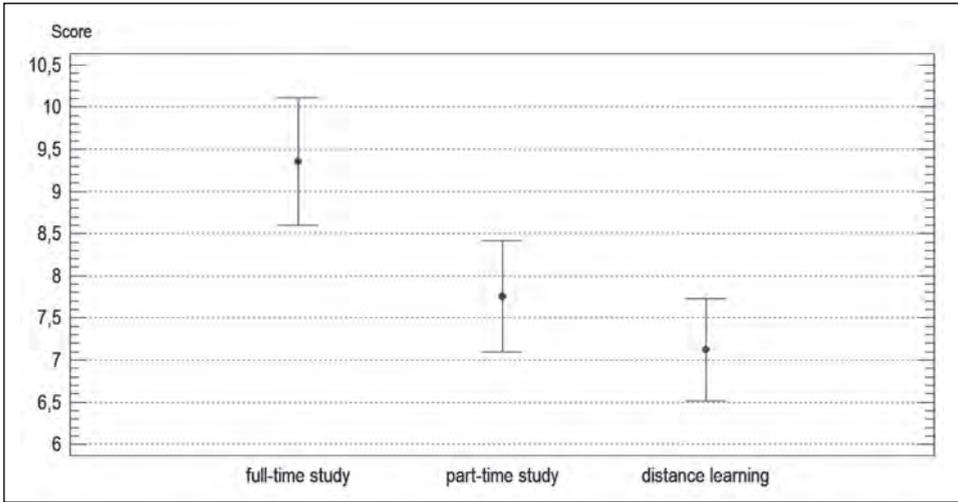
Source: self-processed

The test criteria of the ANOVA-test= 7,44 and its observed level of significance P = 0,0007. The null hypothesis is rejected, the differences in the perceived feedback based on the form of study are statistically different. There is a significant difference in the level of perceived feedback by students of full-time form. There is a statistically significant difference in the level of perceived feedback by students of the full-time form of study based on the results of the post-hoc test. Among those students we measured the highest level of perceived feedback. Among students of the part-time study and the distance learning we got no statistically significant difference within this parameter.

Graph 5: The comparison of the self-study difficulty level
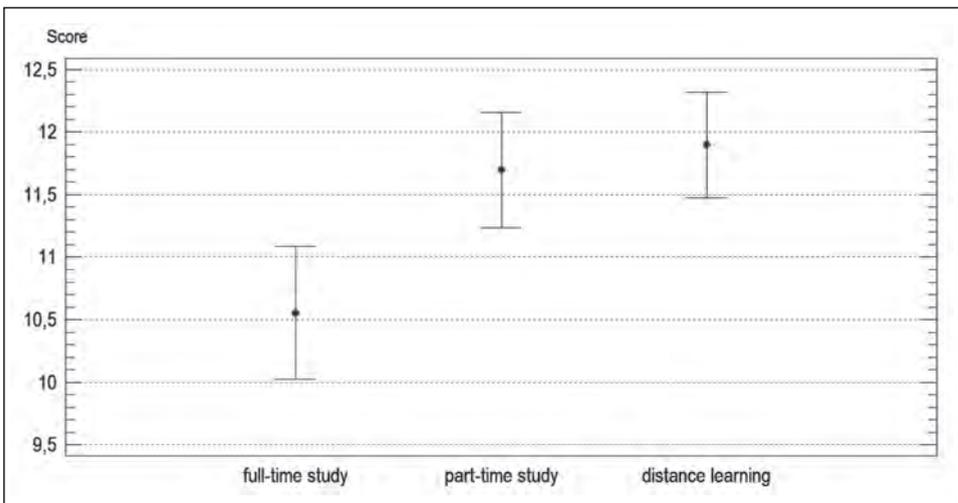
Source: self-processed

The test criteria of the ANOVA-test = 5,90 and its observed level of significance P = 0,0030. We reject the null hypothesis. Differences in the difficulty level of self-study based on the form of study are statistically different. There is a statistically significant difference of the difficulty of the self-study by the students of the full-time study based on the post-hoc test. These students perceive the self-study as the least difficult. There is a statistically insignificant difference in this parameter among students of the part-time study and distance learning forms. The perceived level of difficulty of the self-study if generally very high among students of all observed forms of study.

Graph 6: The comparison of the self-estimate of the success rate in the study
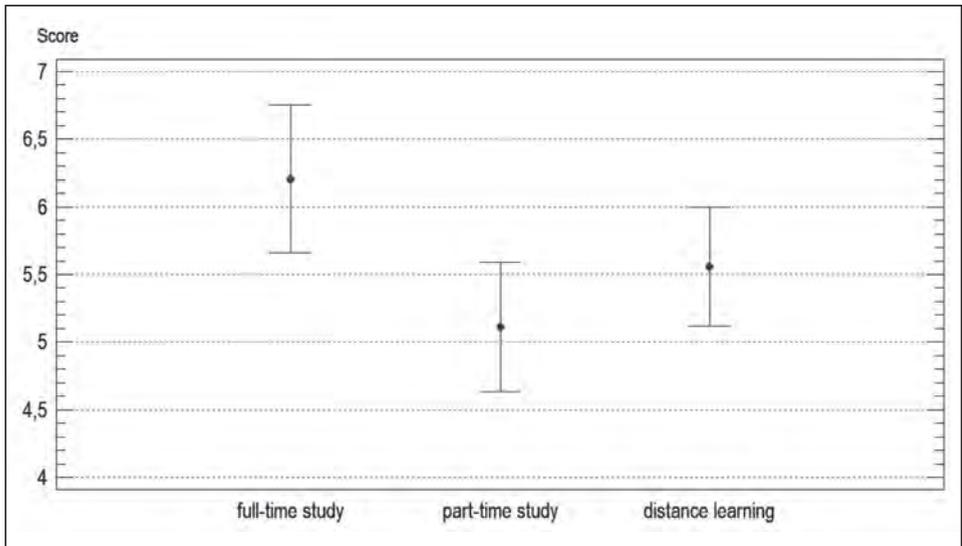
Source: self-processed

The test criteria of the ANOVA-test = 3,14 and its observed level of significance P = 0,0444. We reject the null hypothesis. Differences in the estimate of self-success in study based on the form of study are statistically significantly different. The results are, however, on the edge of statistical significance. There is a statistically significant difference in the estimate of self-success in study among the students of full-time and part-time study forms based on the post-hoc test. The perceived estimate of self-success in study in generally very low and does not correspond with the actual results of didactic test.

3. Discussion

The worldwide COVID-19 pandemic has strongly influenced the education process on universities in the Czech Republic. The list of governmental restrictions drastically reduced the teaching process on universities. The only possible option left was to establish the distance learning form of study through various on-line conference environments. During the first lockdown in the spring 2020, both teachers and students were learning how to operate with these technologies.

During the autumn lockdown of 2020, possibilities of distance learning were generally known and used so it was possible for us to conduct the monitoring of experience with this specific form of study. It was difficult to accommodate to this change for many students and

teachers. Especially within courses, that demand a high level of interaction between teachers and students, the accommodation proved especially difficult. The methodology of research in education is among those courses due to its difficulty and need of showing examples and its extensive work with mistakes during the process.

Despite restrictions, the learning process of the distance learning and its effectiveness proved to be acceptable and comparable with the learning process in the part-time study form. The same results are acquired by Bahasoan, A. N., Ayuandiani, W., Mukhram, M. & Rahmat, A. (2020). We even got statistically better results of learning results among the distance learning students, when compared to the part-time study form students. Nadek (2020) analyses the effectiveness of distance learning in his research based on the type of educational content. Results of testing the effectiveness of distance learning concluded that the distance learning is only effective for theoretical and theoretical-practical courses, whereas in practice courses and distance field courses feel to be less effective.

The attention rate and worse feedback level proved to be the most problematic parameters related to the distance learning. The attention rate is influenced by multitasking performed by students on laptop, smartphone or tablet, that allow to perform other non-related activities during a lecture. The concentration on a lecture requires so-called mental warm-up, during which the student is not capable to pay full attention.

The level of the feedback during the distance learning is lowered by the restriction of social and emotional dimension in the communication between the teacher and his/her students. Non-verbal features of communication, that we consider to be a key, are difficult to observe even with a stable connection, which is something that cannot be considered a standard. The insufficiency of right interactions during the distance learning is pointed out (e.g.) by Adnan, Anwar (2020).

There is one more common feature for both part-time study and distance learning students. The feature is a subjectively perceived difficulty rate of the self-study. Without any doubt, this is caused by the overall difficulty of this whole course, that is perceived as very difficult by students of programmes focused on the education. The lecturer also has more time to deal with the difficult parts of the education content and to train the required abilities in seminars. These positives are somewhat limited in both part-time study and distance learning forms.

Within the motivation to study parameter, attitudes of students of all observed forms of study are equal. The highest value of motivation to study is observed with students of part-time form. These individuals have a high internal motivation to finish the university and to acquire the college title, because it is a required condition to gain or to stay in a certain job, sometimes to get a promotion within their current job. The rate of motivation positively correlates with the results of distance education (in our study, $r = 0{,}67$ at $P = 0$). Analogous results are stated by Ying Want et al. (2008) study.

Relatively equal results were obtained in the estimate of the own success in the study. Average results of this parameter are very low within all three groups of respondents. This proves, that students enrolled in the methodology of research in education, have a low self-esteem regarding their competences within this course. It is interesting, that the estimate rate of the own success in the study of this subject/course, does not correlate with the results of didactic test, that are far better when compared to the students' estimates. However, this self-underestimation is not typical for students of other countries (comp. Chih-Hsuan Wang, Shannon & Ross, 2013).

4. Conclusion

Results of conducted research study obtain first systematic experience with distance learning of university students. We are aware of numerous limits of this study. We included only university students of one specific university. The whole number of respondents is relatively low, if we take the division into three groups into consideration. The research was conducted only within one course and results could be influenced by that as well. All our respondents were students of various programmes focused on the education and that plays a certain part too.

The distance learning shows to be effective enough and is comparable by its parameters with the other traditional forms of study, mainly with the part-time study form (with some analogous features being shared), even when we consider all the limits listed above. It is possible in the future, that some features of the distance learning will be implemented in the university education on a much larger scale. To improve the distance learning, Brown, Hughes, Keppell, Hard & Smith (2015) recommend following:

- To develop a conceptual framework for identifying the most effective use of various intervention tools, supports and resources at early stages of the study lifecycle;
- To investigate the experiences of being a first-time distance learner from a student's perspective 'in their own words';
- To produce a set of overarching principles to help institutions enhance distance learner engagement and success.

This form seems to be especially suitable for some programmes of a lifelong learning. There is a developing concept called the Blended Learning, that contains features of the full-time and the distance learning with a support of an on-line environment. This concept has a chance to become a major organisation form of a study on the universities. It is necessary to pay attention to all restrictions, that come along with this concept. These restrictions are low rate of feedback and low attention rate, which are both connected. New possibilities, that are presented by the distance learning, form a new challenge for an accreditation process and other processes of evaluation of education process and its quality.

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Further education during the pandemic from the perspective of primary school teaching staff

Další vzdělávání během pandemie z pohledu pedagogických pracovníků základních škol

Vlastimil Hubert

Abstract:

In the submission, we address the issue of continuing education for primary school teaching staff during the COVID-19 pandemic. We provide a brief legislative overview and present the results of an investigation that identified the main positives and negatives of online further education programs. Despite all the findings, there has been a strong preference for attendance courses over distance courses.

Key words:

Further education, distance learning, e-learning, online education, teaching staff.

Introduction

The COVID 2019 pandemic has brought a major change to the Czech education system, affecting the life and education of students and teachers in 2020. A call to halt the spread of the pandemic was issued by the World Health Organisation (WHO, 2020). The effort was to significantly and urgently reduce physical contact (CDC, 2020). The Czech Republic has joined the states that have partially or completely closed schools. Overall, these measures affected more than 1.5 billion students enrolled at pre-primary, primary, lower secondary, and upper secondary levels of education [ISCED 0 to 3] as well as at tertiary level [ISCED 5 to 8]. With this in mind, it is very important to mitigate the immediate impact of these measures and to maintain the continuity of education through distance learning. (UNESCO, 2020).

A time of transformation, of economic and social peril, requires an effective education system that can reflect these changes. A focus on the professional development of all education actors, but especially teachers, is desirable. Continuing training, often referred to by the acronym DVPP, is the cornerstone of professional education for teaching staff. The process, which is part of lifelong learning and the development of competencies, is a follow-up to pre gradual training (Průcha & Veteška, 2014) and is characterised by systematism, a form of coordination, and in particular, a duty for teachers.

Generally speaking, full-time teaching is completely irreplaceable in certain respects, and there is no choice but to eliminate the negative. With the introduction of distance learning, there are high demands on teachers. Over 90 % of primary school principals reported that, in terms of time and mental intensity, distance teaching was slightly or much higher than standard full-time teaching (QI, 2020). The almost abrupt focus on distance learning, which takes place through ICT, has focused demand for DVPP, particularly on ICT (Kursch, 2019; Veteška a Tureckiová, 2020).

Along with the increasing importance of lifelong learning, the importance of e-learning is growing (Mason & Rennie, 2006; Kursch, 2019). Developing lifelong learning has the greatest potential in distance learning (Peters, 2004). Thus, the limited supply of distance courses versus high demand inevitably brought positives and negatives in the education process itself but also required legislative action by the Ministry of Education. A very important factor for successful distance learning is the ability of educators to combine teaching and technical competencies (Seale & Cooper, 2010)

1. Legislative context for further training of teaching staff

The aforementioned system of continuing education for teaching staff is considered a core, legally supported activity and the focus of professional development of Czech educators. By Act No 561/2004 Coll., on pre-school, primary, secondary, higher vocational and other education (School Act), the educator has both the right and the obligation to participate in the DVPP, which performs two main functions: standardisation and development. The Education Act explicitly defines the scope of the school's continuing education facility for teaching staff. The facility aims to provide services that complement or support education in schools or are directly related to it. Paragraph 115 states that these facilities provide continuing training for teaching staff and provide guidance on methodology and management issues, convey information on new orientations and practices in education, and ensure coordination of support activities, development programs and other actions.

Act number 563/2004 Sb., on teaching staff, establishes a continuing education obligation for teaching staff for the duration of their teaching activities, by which they renew, maintain, and supplement their qualifications. It can be carried out in universities, DVPP facilities, or self-study. For self-study, the teaching staff shall have 12 days of sabbatical in the school year and, at the time of completion, the staff member shall receive a remuneration.

Decree No 317/2005 Sb., on the further training of teaching staff, the accreditation board, and the career system of teaching staff, defines exhaustively the types of further training of teaching staff, which are

a) study to fulfill qualifications;
b) study to meet further qualifications;
c) studies to further professional qualifications.

Under the above-mentioned legislation, the school principal is responsible for the professional and pedagogical level of education and school services and for creating the right conditions for the further education of teaching staff. At the same time, it organises the DVPP under a further education plan and takes into account the teaching staff's learning interests, needs, and budget of the school. In recent years, more importance has been placed on teaching leadership by the principal, and with it greater responsibility for educational outcomes in the school itself. (Pont & Nusehe & Moorman, 2008). But it is still the case that changing education and its development, but also maintaining the existing quality of education, is only possible through a well-educated, school-ready, and motivated teacher (Kohnová, 2004).

2. Use of e-learning in further education for teaching staff

At the time of the pandemic, the DVPP educational events system was more or less transformed into a form of e-learning. Effective learning in the online environment should mean, for teachers, in particular, acquiring new knowledge and skills relating to online pedagogy, online communication, and interaction, online evaluation, integration of technologies and their availability, respect for copyright, etc. Although knowledge of the use of online learning

platforms and tools for effective online learning is very important, the main effort must not focus on this kind of technological training (An, 2020).

Teaching staff needs to be competent to work with digital technologies (Veteška & Tureckiová, 2008) and to be more autonomous in achieving personal goals in further professional education (Veteška & Tureckiová, 2020).

In the future, the emphasis on teachers' digital competencies will be increasingly reinforced. The Education Policy Strategy of the Czech Republic until 2030+ mentions the need to support and strengthen teachers' abilities to work with diverse digital educational resources, to plan and implement the use of digital technologies at different stages of the learning process, to work responsibly with digital content and to build and develop pupils' digital competences (MSMT, 2020). The success of online learning often stems from teachers' limited experience or skills in using information and communication technologies. Training programs for teachers must focus more on developing skills for teaching with technology (Kim, 2020).

The big challenge of computer science for the whole education system is to train teachers with high-quality and affordable professional development. Mutual networking and systemic support for teachers, vocational focus, and regularity help not only to develop but also to break down social barriers between teachers. (Goode et al., 2020). The National Institute of Education of the Czech Republic is also currently moving in this direction, implementing the project System of Promotion of Professional Development of Teachers and Principals – SYPO. The main objective of the project is the establishment, validation, and implementation of a system of comprehensive modular support which contributes to increasing professional development of both school leaders and teachers in the field of teacher didactics through professional communities using a wide range of forms of peer support and DVPP with defined quality criteria. (NPI CR, 2020).

In 2020, the project was carried out by 49 webinars in the field of professional didactics and 60 webinars focusing on online learning, with a total of 198,698 views. One of the main key activities in the DVPP area is the key activity of KA07, which offers educational programs, webinars, e-learning and combined including the creation of its own learning and support materials, the implementation of training programs, and the preparation of a lecturer and tutor team (EPALE, 2018). In ICT, so-called ICT Methodology Cabinets are created to focus on digital technologies in education and school management to contribute to the implementation of digital technologies in education in schools.

3. Survey objectives and results

The survey aimed to find out what teachers' views were on further education courses for teaching staff during the Covid-19 pandemic. In November 2020, we surveyed what teaching staff saw as the fundamental positives and negatives of DVPP online courses. We also looked at who determined which course the worker would attend, the main reasons for choosing a DVPP, or the main obstacles to completing an online DVPP course from the perspective of a teaching staff member. The data collection tool was an electronic questionnaire, which mainly contained questions closed (polytomic and dichotomic) and semi-closed.

We also used bipolar scaling. Quantitative inquiries were carried out after prior agreement with headteachers at nine selected primary schools from the Ústecký, Moravskoslezský, Zlín, and Pardubice regions. The core set was made up of the educational staff of the schools. Of a total of 294 teaching staff, 266 respondents sent a questionnaire, but 243 teaching staff were included in the final population for evaluation. The structure consisted of 196 women and 38 men with an average age of 43.6 years, with a standard deviation of 9.9 years. They were eligible to complete the online DVPP program. By working with individual schools, the overall return was 90.47 %.

Teaching staff in 2020 considered the offer of training programs to be sufficient (81.4 %) despite this year being significantly affected by the COVID-19 pandemic. Even 94.7 % of workers consider the offer of distance learning to be significantly higher than in previous years.

By the aforementioned legislation, as well as the criteria for evaluating the conditions, progress, and results of the education of the Czech School Inspectorate, it is necessary for the management of the school to systematically evaluate the work and, based on the evaluation, to plan in a targeted way with the educators their further professional development (ČSI, 2020). The management of the school determines the training programs of 25.9 % of the educators, while for 58.1 % of the educators the management leaves the selection directly to the staff. For 15 %, the programs is determined by agreement with colleagues or by the identification of the programs by a methodological association. One percent of respondents identified the item as another without specifying.

We looked at the importance respondents attached to different aspects of choosing DVPP. An essential element in the selection of the training program is the content of education, which is considered important by all respondents. The personality of a lecturer is another important aspect of the selection (95.1 %). The aspects of online education in the teaching profession are related to the positive experiences of the „students" (Krammer et al., 2020) and for 85.2 % of those surveyed, the references of the DVPP provider are important or very important. The price of the course diversified the groups into almost two halves. For 53.1 %, the price is almost unimportant or unimportant, for 46.9 % it is the opposite. Graph 1 describes the situation more closely.

Graph 1: DVPP online course aspects
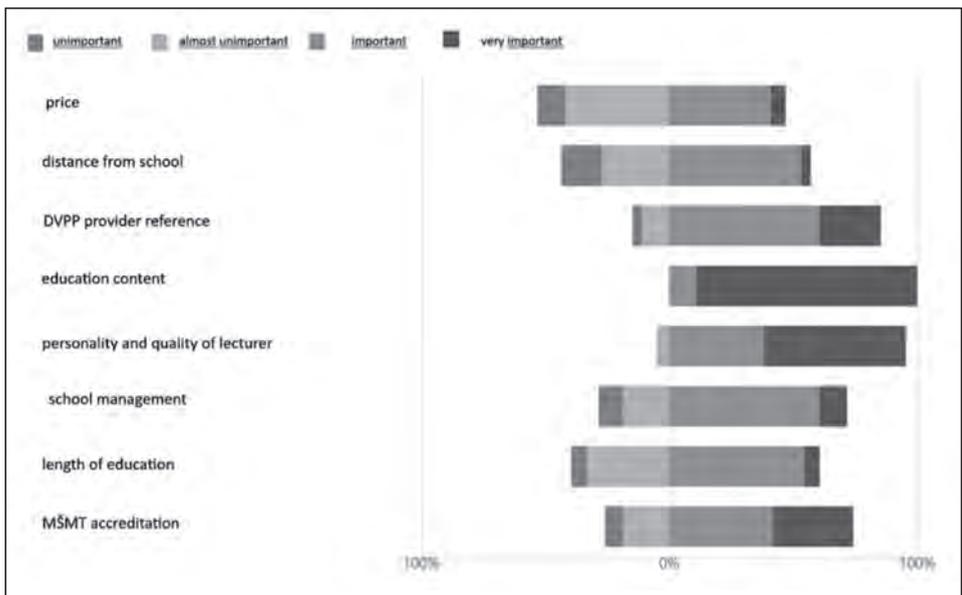
Source: self-processed

An interesting finding is the high proportion of responses (73.1 %) that consider the importance of the award of MSMT accreditation when selecting a program. There is currently an

amendment to Act No 563/2004 Coll. on teaching staff, which aims to revoke the accreditation of DVPP, except for qualification studies, in the consultation procedure. The investment over the last three years in the forthcoming Accredis program, which was to provide an overview of DVPP programs in one place while creating a system of references (reviews), appears to be non-systemic and wasteful. Indeed, the results of this survey indirectly confirm the requirement for this system.

The DVPP online courses are considered by respondents to be the greatest positives of video recording, the time savings resulting from transport to the course, and the opportunity to participate in educational programs in the evening (teachers do not have to be substituted as if they were attendance courses). Minorities reported saving money on transportation and home comforts.

Answers to possible negatives in online education within DVPP courses have been broken down into several basic groups. These were most often two interrelated response groups: impersonality and limited feedback, followed by a large number of participants. Closer graph 2.

Graph 2: Negatives of online education in 2020 DVPP courses
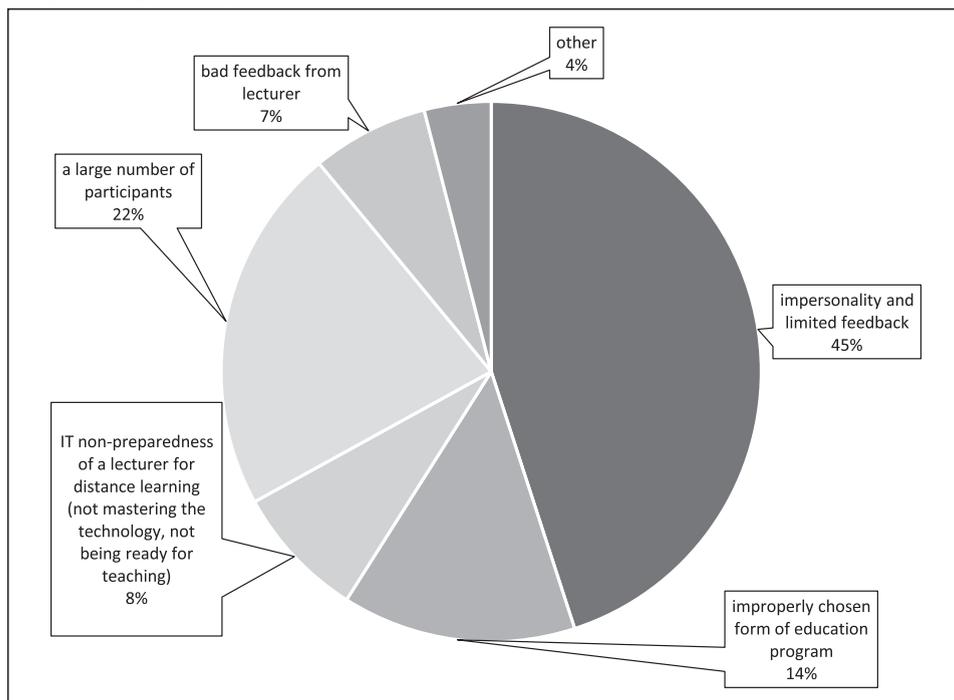
Source: self-processed

Within online education, we can observe two fundamental aspects. The first is the education process itself and the second is the technological and organizational provision of the DVPP course. On a sample of 243 teaching staff, we looked at what was causing them the most problems in 2020. Of these, 45 % were inconsistencies in the online environment in which teaching took place. Internet speeds limited 28 % of those surveyed. There was no problem with technology for 12 % of workers, 10 % have insufficient IT skills. Only 4 % of respondents do not have the appropriate technology. The other unspecified problems were experienced by 1 % of the teaching staff.

Technology is intended to be a tool for the development of new methods and forms of education as well as evaluation. In the framework of the Education Policy Strategy of the Czech Republic until 2030+, the Ministry of Education has committed itself to improve the efficiency of teaching through technology and the real integration of digital technologies. In this case, it is necessary to distinguish between the technique needed to participate in an online course itself and the technique that will serve as an educational tool. For the last year, by Government Resolution No 845 of 17 November. 8. 2020 has improved teacher equipment in the ICT field, also by securing funding for regional education. (MŠMT, 2020).

In the conclusion of the quantitative survey, we looked at whether teaching staff, despite all their experience with the online form of DVPP, were more inclined to attend or distance (online) courses of DVPP. We used the Net Promoter Score (NPS) to evaluate this, which in some form is an indicator of satisfaction and loyalty. It also reflects the likelihood with which the interviewee would recommend this form to his or her acquaintances. (Stenmark, 2019, online). The total NPS of the n=234 group was a total score of -72 points, resulting in a strong preference for attendance courses over online courses (186 critics, 45 neutrals, and only 12 promoters).

4. Summary and discussion

The investigation showed that in 2020 the DVPP offer was sufficient. Most teaching staff are left free to manage the school as part of their professional development. They can determine programs according to their preferences. They see content as a central element in their choice of the training program, with the personality of the lecturer and quality references to the provider being important. It seems inappropriate for the Met to refrain from accrediting these training programs. Even 73% of those surveyed consider accreditation to be important in their decision-making. It is recommended that we continue to look at the accreditation system under development and at least keep the existing accreditation system.

Successful e-learning aims to reduce critical factors. As part of the survey, we identified impersonality and limited feedback from the lecturer as negative elements in online teaching. He also describes the problem of students' impersonal interaction with the lecturer in his research Adnan (2020), which mentions students' previous experience of using technology. Also threatening is the fragmented learning environment, i.e. the variety of programs used by providers. In the area of technical security, this is a limited quality of internet connection. Similar results with the Internet, namely the response of the network environment, are described by Gon & Rawekar (2017).

Despite the biggest positives of DVPP's online courses, which are video recording, transport-related time savings, and the opportunity to participate in educational programs in the evening, 79 % of participants are surveyed for criticism of the distance way. He strongly prefers full-time study of further education programs.

Conclusion

The period of the COVID-19 pandemic has significantly affected the education system. Distance education has become a much-discussed topic in connection with online teaching and has been the focus of attention. Because of the impossibility of organising full-time educational activities in the further education of teaching staff, it has more or less transformed itself into so-called online education. As a result, the SYPO project under the National Institute of Education produced a large number of video feeds from webinars and educational programs, which can be played publicly by those interested later. It was the video footage and the opportunity to watch it in the evening that was a major positive aspect mentioned in the

survey. Nevertheless, a significant majority of teaching staff will continue to prefer full-time education.

Changes in educational processes are not only based on technological developments but reflect social and cultural changes. It is based on the decisions of educators and society in general. Social and cultural change usually takes longer than technological change, and new technologies are not normally implemented as quickly in education as in other areas of human life (Selwyn, 2012).

The investigation has shown that in the area of further training of teaching staff, the technical equipment is not a significant obstacle, but the sheer speed of the internet, which can be a major constraint on successful online learning as well as limited interaction with a lecturer in an online form. We see online education in the DVPP system as a huge opportunity for the professional development of teaching staff. It is desirable to create the conditions and offer such themes and forms to encourage workers to influence the next generation of pupils with their knowledge and skills.

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The impact of the pandemic on adult education from a diversity perspective

Dopad pandemie na vzdělávání dospělých z hlediska diverzity

Lenka Flikingerová

Abstract:

What has the pandemic changed in adult education? What problems have adults encountered in the field of education and online education under the influence of Covid-19-related measures? A comprehensive, integrated approach should be an adequate response to new social risks. Practice reveals that such recommendations are easier to formulate than to realistically and meaningfully fulfill. Diversity education policy focuses on designing an adequate curriculum and selecting optimal teaching strategies resulting from a thorough knowledge of educational groups and their educational needs.

Key words:

Covid-19, online education, adult education, diversity, diversity management.

Diversity concept

The concept of diversity becomes a space for understanding oneself through tolerance and knowledge of the diversity contained in the personality of the individual, i. acceptance of the fact that everyone is unique, which implies the need to recognize individual differences (Duchovičová, Petrová, 2018). Diversity is currently being studied in many scientific fields. It represents a global phenomenon affecting all areas of life, a source of knowledge of heterogeneity and determinants of various phenomena. In education, it is considered a source of new opportunities and innovations aimed at achieving more effective results (Duchovičová, 2018).

Diversity education policy focuses on designing an adequate curriculum and selecting optimal teaching strategies resulting from a thorough knowledge of educational groups and their educational needs. From a global perspective, concepts such as diversity and quality of life have recently become important tools in a multicultural environment. Diversity in organizations exists whether or not the organization is aware of it. Properly managed diversity can be beneficial to a company, just as improperly organized can lead to conflict and destruction.

A comprehensive, integrated approach should be an adequate response to new social risks. Practice reveals that such recommendations are easier to formulate than to realistically and meaningfully fulfill. As stated in the Vision of the Development of Slovak Society until 2030, the values of society are conservative, strongly oriented towards solidarity and equality, their perception will be strengthened in the future towards the social inclusion of vulnerable groups. A balanced approach will be sought between the principle of solidarity and the principle of competitiveness, shifting the importance from balancing disparities between regions towards reducing intra-regional disparities, focusing mainly on social stability, social inclusion and negative social phenomena (Šikula, 2008).

A more familiar term such as diversity, which has been used in our provenance to address issues of individuality and specific needs, is differentiation. It appears in the postmodern period, but as G. Pintes (2013) states in postmodern philosophy, it would be difficult for us to find a concept that was a clear foundation of educational diversity. The roots need to be traced to earlier periods and to the discourses that form a partial area of globally understood diversity.

The author includes the following basic fundamentals:
1. Noetic foundation, built on liberalism, which still has an important place in positivist views. According to liberal teachings, society is built on rational cooperation between competing individuals. Therefore, society does not provide any support (legal, moral) to those who remain defeated in this competition. He notes that there is no society in which all individuals can compete on equal terms, as the diversity of society is so great and typical that society must compensate for these „differences" – compensate in particular with the legislative system. In this discourse, the sincerity (moral aspect) of whether the practical implementation of these ideals in practice can really be applied to the acceptance of diversity is questionable.
2. Moral-axiological fundamnet, based on the critique of liberalism and neoliberalism. According to H. Marcuse, the goal of the change is a society in which man's free possibilities for his natural development are guaranteed. These ideas became a kind of program of modern anarchism in the 1960s. However, this model does not appear to be optimal. History has shown that in the neo-Marxist discourse, after realizing the possibilities of an alternative destiny, groups that had nothing to lose (students, lower social class) decided to act, and instead of progress, a much more significant regression often came.
3. Methodical-pedagogical foundation, means the theoretical-conceptual basis of educational diversity, on the basis of which we can apply the widest possible range of manifestations of diversity in the educational process. This includes the philosophy of existentialism, which was reflected especially in the reform-pedagogical movements. Methods of reform pedagogy based on the emphasis on personal experience, self-development, self-realization and self-actualization highlighted subjectivism in the pedagogical environment and a free free model of education came to the fore in terms of the educational process.

Cox and Taylor (1993) argue that diversity management should be important as a moral imperative, as a legal requirement, and as a factor in organizational performance. Greater diversity can be observed in government organizations, both public and private. The most important thing is to find out the impact, relationship, dependence, correlation of diversity on the effectiveness of the organization and organizational results. Some studies have concluded that more heterogeneous working groups consider other prospects and higher quality production than homogeneous groups (Cox, 1991). Some studies have found that work teams made up of different people tend to share more information, leading to better performance than homogeneous teams (Bunderson, et al., 2002).

Dimensions of diversity

External dimension – differences in apparent, visible individual characteristics such as language, gender, race, ethnicity, age or disability, which often evoke prejudices and stereotypes. In many of these dimensions, there is a higher intragroup than intergroup difference. Internal dimension – differences in values, attitudes, preferences and personality characteristics. It turns out that obvious differences become less important as soon as people discover similarities in opinions, attitudes or personality traits (Chattopadhyay, Tluchowska, George, 2004).

Complications in introducing diversity include, for example, the phenomenon when employees prefer to belong to a homogeneous group, prefer to work with people like themselves as different people, and are relatively resistant to change. In practice, the phenomenon of diversity resistance has even been described, which manifests itself as a dominant response to diversity accompanied by denial, avoidance, resistance or manipulation (Dass, Parker, 1999). Cross-cultural research shows that the acceptance of the ideas of diversity is closely linked to the culture of the state. Organizations whose culture was subject to a national culture with a high degree of individualism, a low value of distance from power, low avoidance of uncertainty, a high future orientation, a lack of masculinity and femininity, and a high performance orientation proved to be more likely to embrace principles. diversity.

Results in the Slovak Republic: Culture is subject to national culture with an average degree of individualism (Slovakia achieved a score of 52, where 0 is a collectivist and proximity to 100 is an individualistic country), a high value of distance from power (score 104, where 0 is a small distance from power and 100 is a large one) , with average value of uncertainty avoidance (score 51), short – term future orientation score 38 (0 short – term future orientation, 100 long – term future orientation), high masculinity intensity serial number 1 (score 110, from 0 femininity – to 100 masculinity) (Hofstede, 2005).

Research on the development of cultural values has repeatedly confirmed that there is little international convergence of values. Differences between nations still exist, despite the ever closer contact between their members. Not only will cultural diversity persist, but differences within countries seem to be widening. National groups come up with a new awareness of their identity and demand that it also be politically recognized. Success in the clash of cultures presupposes that participants on both sides believe in their own values and that there are no criteria for evaluating one as „inferior" or „more sublime."

The feeling of our own identity provides certainty from which we can accept foreign cultures with an open mind. Experiments with intercultural diversity can be more easily started in public than private organizations, because they need to be more accountable to society. It is also easier in services than in production. From an intercultural point of view, an organization would be ideal that would allow its members to make full use of their abilities, including those given by their cultural identity whether they are artistic, linguistic, social, temperamental and others (Hofstede, 2005).

Research of covid-19 measures for education and online education

For the purposes of this paper, we conducted an anonymous online research on a random sample of the population, which was attended by 167 respondents. The questionnaire consisted of thirteen questions focusing on the impact of measures related to education. It was implemented from 3 to 13 December 2020, and we managed to include respondents in all regions of the Slovak Republic. The conditions for participation were two: at least 18 years old and living (working) in the Slovak Republic. Our aim was to find out what problems they encountered in the field of education and online education within the framework of Covid-19 measures.

At the same time, we asked what help in education, counseling or support they or the people around them would need to cope with a better life situation in this specific period. The online environment and IT technologies have recently become probably one of the most inflected concepts. The impact of restrictive measures in all areas of life has shown a completely different view of their significance for everyday life. The almost complete restriction of full-time education was also reflected in the output of this survey. The vast majority of industries had to adapt overnight to new working and educational conditions.

We assumed that the difference in the perception of this new situation will be more sig-

nificant, especially in terms of gender, age or education. When evaluating the obtained data, we monitored the diversity, i.e. differences identified between gender, age and educational attainment. The research sample was dominated by respondents from the Bratislava region (62 %) with a university degree (82 %), (secondary and vocational education 18 %) as can be seen from graphs 1 and 2.

Graph 1 and 2: Representation of individual regions and the highest achieved education of respondents
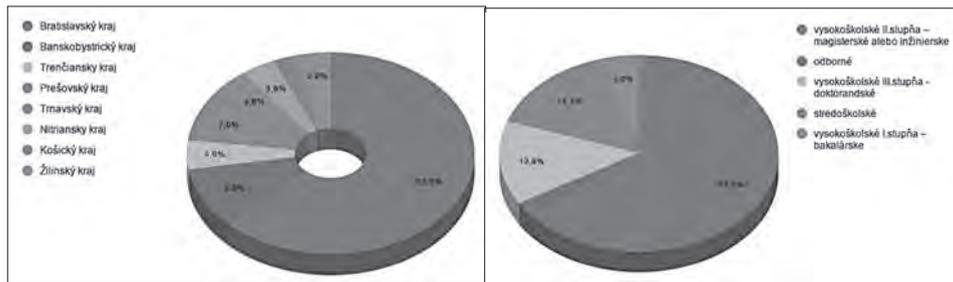
In our research, we focused on helping with education, counseling and support to help people cope better with life situations during this specific period. We could summarize the answers of the respondents into five areas.

The first most frequent, concerned online education. Among the most recurring were: the need for better technical equipment, the acquisition of technical skills to make better and more comprehensive use of online platforms, employer-friendliness in education, tailor-made education and short, focused, clear information on development opportunities. As part of the need for distance learning, under the influence of current changes, the creation of a space where it would be possible to find comprehensive information about the possibilities and the current offer.

Better preparedness of teachers and andragogues for this form of education, development of criteria and standards of online education, and related quality and professional distance courses, from various fields and industries. Given the considerable amount of information in today's information age, and the associated information overload, the need for sorting and analysis came to the fore in most cases, the output of which would be up-to-date and relevant information, not only in education but in many cases. most frequently recurring category.

The need for career, psychological, counseling not only associated with technical support, but also coping with stress and new situations related not only to Covid-19, but also subsequent lifestyle changes, or new problem areas. One category of opinions would concisely summarize this category „the priority in this period is to stop it economically and mentally".

In this second category, there were needs in areas such as: working with an aggressive client, relaxation techniques, marriage counseling, mental health support, lifelong learning promotion, personal development and new skills support, motivational and psychotherapeutic exercises, psychohygiene, work psychology, teleworking management , psychological and philosophical conversations, coping with common life problems, stressful situations, fears of a virus or social isolation.

This is followed by the third most frequently recurring area, the loss of social contacts. This was also the most recurring problem that respondents perceived in online education: „I lacked social contact and real interaction, not just virtual". More than half of the respondents perceived as one of the problematic areas the loss of personal contacts and feedback,

which is irreplaceable in the field of education (full-time form was assessed as more contact, livelier, more interesting; in the online space group dynamics and interactivity is reduced, dependence on training quality from the technical skills of the lecturer, the attention in online is more stressed, the length of online education must be shorter, which often loses the content of the topic). This is confirmed by the three most common statements that respondents identify with: I prefer the full-time form, because I need personal contact, feedback and exchange of experiences with the lecturer and participants (48 %), I prefer a combination of online and face-to-face teaching (34 %), Online education is exhausting for me and I will not learn what in a personal meeting (18 %), in the part of problems with online education it was the highest number of 59 % for the item I missed social contact.

On the other hand, the positive elements of online education were the saving of time and money for travel, the possibility of working from home, more time for family, better concentration in the comfort of home, the ability to connect anytime and anywhere, the ability to choose content and not waste time on topics which are not beneficial. Online education suits me well and is enough (18 %), more time for education (10 %,) I have adapted, I use information technology much more, also in education (31 %), the measures did not affect anything, everything went unchanged (32 %).

We would combine the fourth and fifth most frequently recurring areas, as they are related to the Covid-19 measures. This is the area of financial assistance, often existential problems, income shortfalls, the need to support technical support in the transition to online education and work, proposals for individual online consultations with the state and institutions, and in the second category of response to the whole situation, the need for rational anti-epidemic measures, without creating fear and chaos, repeatedly with the only desire for this situation to end and life to return to normal.

The representation of men (35.5 %) and women (64.5 %) in the survey, when compared to the issue as Covid-19 and related measures have affected education at work (privacy) to see differences. For men, it is more often a loss of income that did not allow education. The most common answer for both men and women, one third of the respondents was that the measures had no effect and everything went unchanged. The other two most common responses, in addition to the lack of technical equipment for online learning, were: more time for learning and facilitating learning by switching to online learning. Men prefer the full-time form, because they need personal contact and feedback for education, or a combination of full-time and online teaching.

For women, the combination of full-time and online teaching exceeds, or a purely full-time form. Women rated online education as more exhausting, in which they learn less than in full-time form. For both women and men, the three most frequently mentioned problems in online education, which they encountered were: I lacked social contact, lack of motivation and fatigue, insufficient internet connection. Together they agreed with the statements: I prefer the full-time form of education (49 %), a combination of online and full-time education (37 %), online education suits me well and is sufficient (17 %), online education is exhausting for me and I will not learn what in a personal meeting (17 %), the topics I deal with in education require a full-time form (14 %) in approximately equal proportions for men and women.

In our sample of respondents, only 24 % do not study at all. Within the age diversity, the effect of restrictions on all age categories is visible, in the most frequently repeated items in all categories in the first two were: „I adapted much more to the use of information technology" and „did not affect, everything goes unchanged", no. 1. In the part of the questionnaire with which statement you agree, all categories in the first place gave the opportunity „I prefer the full-time form, because I need personal contact, feedback and exchange of experiences with

the lecturer and participants". Age group 55 and over ranked first „I prefer a combination of online and face-to-face teaching". The table lists the first five most common answers in terms of gender, age and household composition:

Table 1: How the measures affected education, own processing

How did covid 19 and related measures affect your education? (Three most common answers (dark), next two (lighter color)	Male	Female	18-25 years	25-35 years	35-45 years	45-55 years	55 and over	One parent with children	Partner couple	Couple family with children	Multigeneration al family	Live alone
More time for education												
Insufficient technical equipment for online education												
Insufficient skills for online education												
Didnt have access to education (it was provided only in person)												
Didnt affect, everything went unchanged												
Child care, complicated family situation didn't allow me education												
The transition to online education, made my education easier												
Adapted, use information technology much more, also in education												
Loss of income, didnt allow education												
Health, mental health problems, coronavirus concerns, didn't allow education												

Diversity, covid-19 and lifelong learning

It is clear that this emergency has accelerated the digital transformation and seemed to blur the line between work and personal life. At the same time, it also showed weaknesses that need to be addressed, which can slow down the adaptation of individual groups in terms of age, gender, education, household composition or economic activity. Organizations now have a unique opportunity to adapt and transform workplaces into something more productive, sustainable and shapeable.

This extraordinary situation and the limitations associated with it have shown us that prejudices in terms of age, gender diversity are out of place in today's digital age. Not only public but also private organizations can also create diversified heterogeneous working groups in this way, which consider other perspectives and higher quality production than homogeneous groups, and tend to share more information, leading to better performance than homogeneous teams. Our quick survey also confirmed the assumption that, regardless of age or gender, it is possible in a relatively short time to adapt to changed conditions in the field of education. In the context of in-depth research, the aspect of diversity can be the tool that more clearly names and reveals individual problem areas that can then be addressed in a targeted manner.

One of the areas that has mainly affected teachers and andragogues is their quality preparation for online education. As we named above in the post. As reported by EPALE (2020), some countries are preparing teachers, trainers, trainers and instructors to be able to develop their teaching and training materials (eg RO, IT). Some online modules are needed to teach digital skills. Some platforms offer users demonstrations and training online. Teachers, lecturers, students, businesses and parents should have information and advice on the organization of distance learning. In order not to increase inequality in access to education, it is important to ensure that students have the same opportunities at home (computer, headset, programs and high-speed internet) otherwise provided by public authorities (staff may need similar support – even in our survey was this problem repeatedly presented).

Public authorities should provide quality standards for online education. Collaborate with employers and social partners to share their materials online or create new digital learning platforms for similar situations. Some companies already have online modules available on their websites, or it would be appropriate to contact textbook publishers and share materials online. We would like to emphasize in particular the cooperation, which is especially important in such emergency situations and at the same time will help everyone not only to speed up, but also to improve and refine this transition, so that the level of education does not decrease if the problems arise in the long term. even access to education.

Adult education and lifelong learning, among other functions, fulfill an important function of purposefulness and meaningfulness by being a specific goal, they are also a cross-cutting goal and a method for achieving other goals of sustainable development, i. inclusive, equitable and quality learning and lifelong learning opportunities for all. The European Program for Adult Learning emphasizes the need to increase participation in all types of adult learning (formal, non-formal and informal learning). The goal is to participate at the level of 15 % of adults aged 25-64. The European Education Area proposes to increase adult participation in lifelong learning to 25 % by 2025. A positive aspect of the crisis in the field of education, from our point of view, is the opening and faster adaptation to the online space, which we perceive as complementary to full-time education, however, using its potential is a means of increasing adult participation in education.

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Motivation of educators of educational facilities for the provision of institutional and juvenile correctional education to work performance

Motivace pedagogů vzdělávacích zařízení k poskytování ústavního a nápravného vzdělávání mladistvých k výkonu práce

Jan Tirpák, Zdeněk Svoboda, Arnošt Smolík

Abstract:

The paper is a partial output of broader research and publication activities carried out with the aim of improving and thematically enriching the process of further education and professional development of employees of the system of educational facilities for the provision of institutional and juvenile correctional education. In the article we focus on the topic of motivation of educators in educational facilities for the provision of institutional correctional education (specifically children's homes with a school) for the work performance. The research was carried out using a standardized LMI-Leistungsmotivationsinventar (Schuler&Prochaska, 2011), which is based on significant theoretical and empirical works focused on motivation to perform in a professional context. The research sample consisted of 57 educators and the group was further internally differentiated in terms of age and length of practice.

Key words:

Motivation, work performance, educator, institutional education, severe social deviation, further education, professional development.

1. Introduction

M. Wagnerova points out that different activities are supported by different motives. She also adds that one of the strong motivating factors is motivation to perform. In general, it expresses the desire to achieve success, which, according to the author, is generally a human tendency (Wagnerová, 2008). Failure to achieve adequate performance of an individual, even if otherwise potentially appropriately disposed of, naturally and logically is not caused only by a low level of motivation (Liu et al., 2019). It can also be caused by other factors. For example, lack of opportunities, skills, experience, laziness, or personality deficit (low empathy, absence of charisma, etc.).

It would therefore be a gross generalization and a mistake to assume that the problems of teachers – educators from the environment of educational facilities specialized in the field of compulsory institutional education can be solved only through efforts to increase motivation to work. On the contrary, it is difficult to imagine that the educator implements the necessary changes in the child's personality without the necessary reason and the psychosocial setting of the personality for "movere".

The performance form of motivation monitored by this text thus represents a pedagogi-

cally desirable and personally characteristic, relatively constant tendency of the educator to achieve the best possible performance in activities and environments in which it is possible to apply quality in absolute and relative terms, and which may or may not succeed (Tirpák, 2019). It follows from the logic of the matter that it is a systemic element that comes into play in the implementation of the educational process in the monitored environment and is able to potentially negate it or improve it. It is worth keeping in mind that performance motivation (possibly motivation to succeed) cannot usually be without a certain degree of competition, directed towards the environment, one's own person or both.

2. Theoretical basis

The very concept of motivation is not attributed to a completely uniform content (Mohamad, Ismail & Nur, 2020, Erpebeck et al., 2017, Patrick et al., 2007, Walton, 1970). According to Čáp and Mareš, this is a summary of driving moments in personality and activity (Čáp&Mareš, 2001). Benesch defines motivation as a sudden change caused by ongoing activations (Benesch, 1997). Hartl and Hartlová define it as an internal governing force responsible for initiating, directing, maintaining, and energizing the targeted behavior (Hartl&Hartlová, 2010). Nakonečný points out that motivation relates to changes in an organism that set it in motion until reduction in that change is achieved (Nakonečný, 1997). Similarly, according to Pardee, motivation is a factor that activates the organism to respond, behave, act leading to the achievement of a goal, satisfaction of basic needs or desires (Pardee, 1990).

Helus also points out that motivation is closely related to emotions, because satisfaction is an emotional experience (Helus, 2018). We subjectively perceive motivation as a conscious desire, and we can usually decide whether or not to be guided by these desires. The causes of motivation can be physiological events taking place in the brain and in the body, but also cultural and social interactions with individuals around us (Nolen-Hoeksema,2012). Thus, in general, motivation is an intrapsychic process, based on need and resulting in the desired internal state, a process that is initiated endogenously or exogenously (Nakonečný, 2014). In both cases, therefore, we assume the interaction of internal and external factors and talk about the interaction between the motivated subject and the motivating situation (Říčan, 2007). In the environment of pedagogical interaction, it is an element worthy of special attention.

Human motivation can also be expressed through the goals that one sets and strives to achieve (Rogers, 1995). In the pedagogical environment we monitor, it is worth mentioning the possible agreement or antagonism between the goals of society, the pedagogical institution, and the pedagogue – educator. Expressing motivation through goals has its advantages, is specific, understandable to the general public, facilitates self-knowledge, the process of education and self-education (Čáp&Mareš, 2001). However, the developmentally highest level of motivation is represented by volitional action (Nakonečný, 2014), in which, in addition to external, internal control of actions is also substantially applied.

Performance motivation or in other words the motive of performance is a topic to which special attention is paid. However, the topic of performance motivation does not relate to any performance, but only to those performances that are causally related to self-concept and self-evaluation (Tirpák, 2019). Performance motivation (or also motivation to succeed) is defined by the need to set challenging goals and by making efforts to achieve them as well (Madsen, 1974). According to Nakonečný (2014) it is necessary to strictly distinguish between the concepts of performance and capacity.

Performance as a current manifestation and result of a given activity, capacity as a disposition to performances of a psychomotor or mental nature. We can therefore understand it in general as a motivation to achieve success, improve performance, manage tasks and efforts

of an individual to improve in all activities in which he can achieve success. Each person can be characterized on the basis of his relationship to his own performance and expectations of success or failure (Vágnerová, 2016).

If it is to be possible in the pedagogical environment (and naturally in another) to measure whether or not someone is functionally motivated to work, it is necessary to know the goals and conditions of the required performance (Ames, 1990). Performance itself is generally understood as the result of a targeted activity that takes place over time under certain conditions (Shah et al., 2012). It is given by the level of the mentioned motivation, the scope of learning (including the achieved expertise) and is closely related to the characteristics and dispositions of the individual (Baštěcká et al., 2009).

It follows from the above that the success of a teacher working as an educator in educational facility for the provision of institutional and juvenile correctional education can be assessed in the direction of the intensity and quality of his motivation to perform. Among the key factors influencing the already mentioned performance motivation of the educator, in accordance with the theoretical basis, we can include (Tureckiová, 2004) the content of work (enrichment or expansion of its content in accordance with the employee's abilities), agreement on performance goals and willingness to meet them. Furthermore, the participation (involvement) of employees and the opportunity to engage in goals (from the phase of preparation and formulation of goals to the concrete achievement, evaluation, and reward of meeting goals).

Transfer of powers (delegation) and responsibility for one's own performance as well as for the performance of the team to employees. Effective communication and feedback system. General information and provision of all information that employees need not only for their current work performance, but also for certitude. Establishing relationships that support specific interpersonal relationships within a working group (team). Possibility of personal and professional development and career growth. A fair and transparent (performance or competence-based) system of remuneration and performance appraisal.

General requirements of the employer aimed at the performance of an educator in educational facilities for the provision of institutional and juvenile correctional education, with children with severe social deviation can be characterized by defining the content of his activities. The qualification minimum for the performance of the position of educator in this type of facility is secondary school study of pedagogy supplemented by completing a lifelong learning program focused on special pedagogy or secondary school education of any specialization, supplemented by completing a lifelong learning program focused on education and a program focused on special pedagogy. The qualification preconditions of the educational profession can also be related to the need to pass a psychological examination of competence before starting employment. This requirement is undoubtedly a proof of the expected psychological demands of practicing this profession.

At the most specific level in defining the area of performance requirements for the educator, or pedagogical worker, implementing educational activities in a facility for the provision of institutional and juvenile correctional education, namely, we are talking about the factors of the educational process, whose primary pedagogical intervention in some of the monitored institutions falls into the period outside teaching. Education within these facilities is often perceived as a more complex activity than educational (teaching) activities themselves. This is due to the fact that education in alternative care facilities should actively shape the personality of an individual and actively influence the patterns of his behavior.

Therefore, the frequent reduction of the role of the educator to the level of the worker responsible for compliance with the regime in school facilities working with a child with a serious social deviation seems to be minimally controversial. In this context, it would be

extremely dangerous to prioritize only the regime level of work and, with some simplification, to place emphasis only on discipline and compliance with the prescribed rules.

It is necessary to note that in terms of the requirements for the implementation of any more sophisticated approach in the field of pedagogical practice, it is also necessary to meet the corresponding requirements for the competencies of persons implementing educational activities (in more detail e.g., Smolík&Svoboda, 2012 or Smolík, 2016). It is necessary to continuously develop these competencies, hand in hand with the support of motivation for work performance. We consider the knowledge of important aspects of motivation of setting for work performance as one of the important elements of personnel work with educators, especially in the context of their further education, personal and professional development.

3. Methodological background

The research was carried out on a sample of 57 educators of school facilities, working with the target group of children with severe social deviation. The research group was further internally differentiated in terms of age and length of practice. The average age of educators was 41 years, and the average duration of practice was 13.5 years. As part of our research survey, we evaluated the motivational structure for performance using a standardized LMI Performance Motivation Questionnaire-Leistungsmotivationsinventar (Schuler&Prochaska, 2011).

The final version of the questionnaire consists of 170 items, which are assigned to 17 scales (dimensions). The final authoritative concept of 17 dimensions (scales) of motivation to perform in a professional context is contained in the following personality traits involved in one's own performance: stamina (VY), dominance (DO), engagement (AN), confidence in success (DU), flexibility (FX), flow (FL), fearlessness (NE), internality (IN), compensatory effort (KU), pride in performance (HV), willingness to learn (OU), difficulty preference (PO), independence (SA), self-control (SK), status orientation (OS), competitiveness (SO), purposefulness (CV), overall score (CS).

A standardized LMI-Motivationinventory Incentive Questionnaire (Shuler et al., 2011) was chosen to collect the necessary quantitative empirical research data. The internal consistency coefficients (Crobnach α) for all incremental samples were calculated to verify the reliability of the overall score and the scores in each dimension. With reference to the table in the manual, the authors state that the values range between 0.68 and 0.86 and that the items are valid in terms of content, as their formulation is anchored in the theory of performance motivation. Correlations between scales range from 0.34 to 0.63 (Schuler et al., 2011).

4. Results of the research survey

The basic profile of the motivational structure of performance in the professional context according to the arithmetic averages of responses for educators is shown in Graph 1. The total mean value from the questionnaire manual is 4.55 for all items at a minimum of 2.61 and a maximum of 6.32. The data refer to a sample of N = 1671 subjects. It is therefore evident from the graph that most of the averages of the resulting profile of the motivational structure of performance in educators remain above the middle value. If we start from the basic premise that the motivational profile represents a relatively stable characteristic of a person's personality over time, the content of which is the dominant motivational orientations or tendencies, respectively their composition, these results represent the motivational profile of the structure of performance in the professional context for educators of school facilities working with a child with a severe social deviation. Of course, we realize that our statement is quite daring with an attempt at a certain generalization.

However, we are of the opinion that the dimensions of motivational profiles presented by

us are examples that are generally valid, i.e., that every person (and therefore individual professions) can be characterized by (Tirpák, 2019). Overall, this would allow a deeper understanding of the individual manifestations of the individual (group), the whole complex of his behavior or actions and allow effective stimulation, i.e., successfully influencing the motivation of the individual (group) in the desired direction.

We understand the work activity of the educator as purposeful, intentional, and systematically performed, i.e., motivated activity. It is an aspect of motivation of human behavior, which is associated with the performance of work (Bedrnová&Nový, 1998), with holding a certain job position and with the performance of the corresponding job role, i.e., with the performance of work tasks. Work motivation expresses a person's approach to work, to the specific circumstances of his job and work tasks, expresses the form of his willingness to work. It goes without saying that the primary reason for work is the need to provide oneself or other people with the basic means of life. However, an increasing number of people, by performing their work activities, satisfy many other motives as well (Tirpák, 2019).

Graph 1: Profile of the motivational structure of performance in the professional context according to arithmetic averages of answers for educators of educational facilities working with a child with a severe social deviation ´
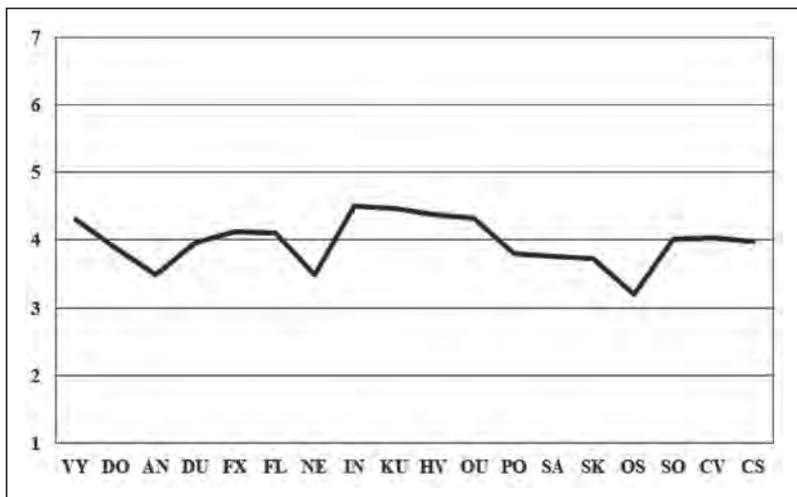
Source: own processing

Work performance is usually the result of motivational forces, human abilities and the quality of working conditions. It follows that even excessive performance motivation is ineffective in the absence of skills, just as extraordinary skills do not causally lead to high performance if the individual shows a lack of motivation (Křeménková, 2010). However, motivation is closely related to the attitude to work as such (Bedrnová&Nový, 1998). Age and length of practice of educators are considered as independent variables of empirical research.

The third variable was to be gender, but in view of the high disproportion of respondents, we abandoned this survey. The results of our findings are shown in Graphs No. 2 and No. 3. It is not possible to clearly predict what can cause differences. We believe that this is a whole complex of causes. Examining motivation to perform is methodologically often difficult. This is due to the fact that one is not fully aware of one's motivation to perform in all its complexity

and complex structure. Human motivation is only an internal force, its structure and strength can therefore be observed, evaluated, and measured only indirectly (Tirpák, 2019).

Graph 2: Profile of the motivational structure of performance in the professional context according to arithmetic averages of answers for educators of educational facilities working with a child with a serious social deviation depending on age (blue = $V_{\check{S}Z}$ 20-30 years, red = $V_{\check{S}Z}$ 31-40 years, black = $V_{\check{S}Z}$ 41 years and over)
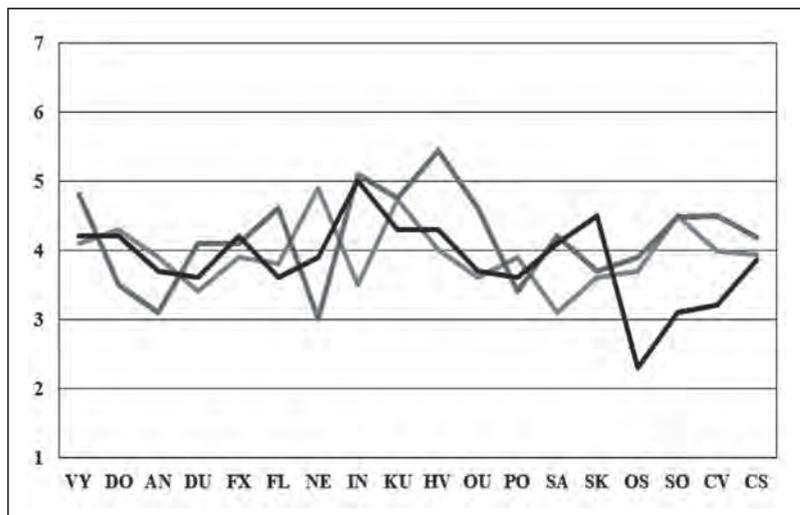

Source: own processing

Graph 3: Profile of the motivational structure of performance in the professional context according to arithmetic averages of answers for educators of educational facilities working with a child with a serious social deviation depending on the length of practice (blue = $V_{\check{S}Z}$ 0-9 years, yellow = $V_{\check{S}Z}$ 10-19 years, black = $V_{\check{S}Z}$ 20 years and over)
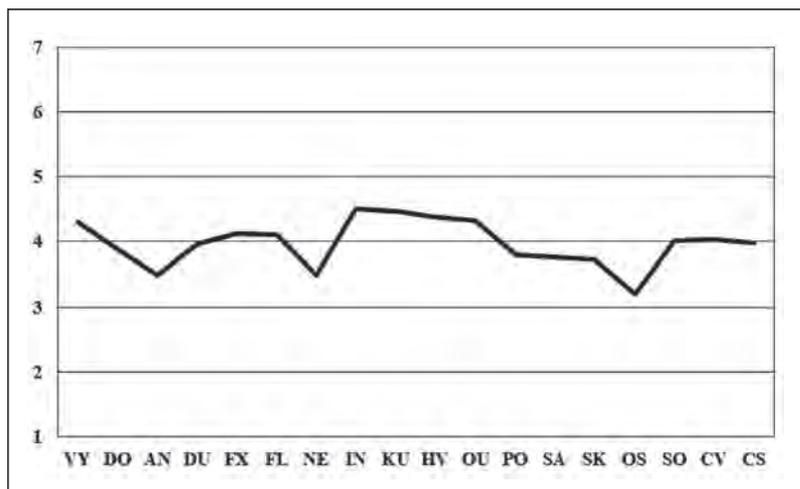
Source: own processing

In our opinion, the results can be influenced by many factors already discussed in this article, especially the content of the educator's work in the institution, the identification with the work, external and internal stimulating factors, pedagogical competence, quality of working conditions or job satisfaction. However, differences in individual motivational profiles can be traced not only in terms of length of practice, but especially in relation to age. In this respect, it is mainly an orientation towards the status, which is significantly below the standardized norm for the age category of 41 and more in terms of the average of the resulting profile. Status Orientation (OS) describes efforts to achieve an important role in the social environment. Status and the need to achieve it is a strong motivating factor, and failure to meet this need can cause frustration for individuals (Ďurič et al., 1997).

In general, we can currently distinguish in the pedagogical reality of two seemingly conflicting areas, which have the ambition to cover basically the full range of activities performed by the educator in educational facilities working with a child with a severe social deviation. The area of providing care, which is associated with activities aimed at providing for the basic needs of children, is often mentioned. Care is a technical term from the environment of social work and in the pedagogical or psychological level it has no professional support in this sense. It is used without selection, which is common in the pedagogical – psychological environment. Usually, however, we mean the spectrum of what the child should acquire at the level of biological and social needs (e.g., after Eysenc). Recently, an emphasis has been added to experiencing comfort and safety.

The emphasis on the targeting of the whole process, methodicalness, its substantial dimension disappears and there is no adequate psychologization of the issue. The second area is the level of education, i.e., pedagogical activity on the basis of pedagogical – psychological starting points. In general, the purpose of educational facilities for the provision of institutional and juvenile correctional education is to provide the child with proper upbringing, education, and care in the interest of his healthy development, in order to achieve the overall development of the individual's personality.

Ergo of qualitative and quantitative changes in the personality of an individual, professionally directed and systemically designed in accordance with the personality of the child as an authentic, internally integrated and socialized being. The latter also emphasizes the psychological conditionality of pedagogical design of the educational process in the monitored facilities. This includes, for example, the pedagogical use of providing these biological needs, including the conditional saturation of some of them, which is perceived in the first approach as at least controversial.

The human – political and pedagogical – psychological concepts come into contact here. Human and scientific. Naturally, their proper interconnection is realistic. In reality, however, their practical antagonism is still more noticeable. The connection and thus the emphasis on higher expertise (science) of the system places an excessive to unrealistic burden on the readiness and expertise of educators. They should be able to create appropriate strategies, or at least implement them under professional guidance (special pedagogue – etoped or psychologist, who, however, is usually missing in these facilities).

In the above context and with regard to the scope of the text, we will focus on the most interesting cohort of respondents (over 41 years of age) and on their already mentioned reduced social status compared to the norm. It can be concluded that the educators we monitor at the age at which the individual is focused on social security do not reach even the declining limits of satisfaction with the educator's own social (work) role or the potential feeling of a positive social response from others. According to experts, self-satisfaction tends to be shifted to social security and perspective at this age.

However, if educators are exposed to situations that they understand only experientially and assess them essentially only through the prism of their personality, they must often be relatively unsuccessful in their pedagogical work. Experiencing success with the supposed or even actual final success of the correction of a child with a serious social deviation (end of institutional education) is also not quite common. It is difficult to find the elements on which to feel the success. Furthermore, it is an age period when some teachers are no longer physically sufficient for the demands of active pedagogical activities with children in the educational group, they are early physically and mentally tiring and less regenerable. This existential experience can also evoke a sense of futility in pedagogical activities and lead to the feeling that action and commitment are unnecessary. They lead to nothing and no one appreciates them adequately.

Another factor that can shape the self-concept of the educator and his reduced orientation to social status is the fact to what extent he is able to functionally maintain the discipline of children in his work. If he feels that he has to go the directive path of achieving power and does not go beyond the mere suppression of the negative phenomenon from the position of predominantly formal authority, it can have the effect of dividing children and educators on the border of "we" and "they". Conflicts arise and the emotional response is extremely negative from both sides. The educator gets the feeling that the children do not respect him and that they allow themselves too much for his person. He is usually right.

The occurrence of the above-mentioned aspects is in direct conflict with the fact that the educator can be perceived as personally and socially successful and respected. It is often not only difficult to maintain motivation to perform in such a situation, but it is up to a personal challenge for the educator. However, not everyone is willing to accept it. And not everyone is able to fill it successfully. If we are looking for the "culprit", it is possible to point out the overall setting of the system of monitored institutions, which stagnated in the 80s of the last century and there is still no clear will to modify it. The pedagogue – educator is not purposefully prepared for the complexity of education in the 21st century. How this fact can be reflected in his psychosocial setting in the field of motivation to perform, was the task of this empirical research.

5. Conclusion

Among the significant partial findings in this research, we include the conclusion about the differences in individual motivational profiles, which can be traced in educators not only in terms of length of practice, but especially in terms of age. We hold the basic premise that the motivational profile represents, over time, a relatively stable characteristic of a person's personality, the content of which represents the dominant motivational orientations or tendencies, or their composition. The results therefore represent the motivational profile of the structure of performance in the professional context for educators of school facilities working with a child with a severe social deviation.

However, it is necessary to point out and discuss whether it is possible to use these profiles at a more general level. That is, whether there are specific profiles of the motivational structure of workers for certain professions, or whether the use of these profiles is possible only at the level of individuals. However, we are of the opinion that the above dimensions of motivational profiles are examples that are generally valid, that is, that every person (and therefore individual professions) can be characterized by them.

From the point of view of education management, however, the conclusion would allow a deeper understanding of single manifestations of the individual (group), the whole complex of his behavior or actions and allow effective stimulation, i.e., successfully influencing the

motivation of the individual (group) in the desired direction (Tirpák, 2019). However, these are facts that could be the subject of further detailed examination. In this regard, we propose to focus on determining variables, such as the qualification and expertise of educators, personality traits or job satisfaction or dissatisfaction.

It is necessary to realize that the educator experiences various situations in his profession, while in some his expertise comes to the fore, while others require more authenticity and expressions of personality traits. You could say that the educator is constantly and simultaneously moving on two levels. On an authentic and professional level, each of which is differently intense at different times. We are of the opinion that one without the other is not enough, so neither can be replaced by the other.

The educator is a professional, the bearer of responsibility for the educational process (Pacnerová et al., 2012). If we raise the "science" of the field of work with a child with a serious social deviation without adequate support in the field of further education and professional development of educators, two non-meeting sets of systems will emerge. This is perhaps also one of the reasons why previous innovations in the area of children with compulsory institutional education have not been successful.

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Analysis of secondary vocational school students' satisfaction with QMS

Analýza spokojenosti studentů středních odborných škol s QMS

Roman Liška

Abstract:

In an effort to improve various processes and results of schools, quality management systems (QMS) are currently being used by educational institutions. The aim of this study is to assess and analyse the satisfaction of students in schools that use these systems and compare them with the views of school principals. The survey was conducted at five schools, with the participation of 2,086 students. Students' satisfaction on the four-point Likert scale 1-4 ranged from 3.01 to 3.50. School principals rated pupils' satisfaction higher than students.

Key words:

Satisfaction, quality management systems, school, climate, management.

Introduction

The aim of the paper was to evaluate and compare the impact of the most commonly used quality management systems (self-assessment framework CAF, EFQM and ISO standards: 9001) on student satisfaction and their attitudes towards school. An experimental, exploratory and ex-post-factual study was carried out using a standardized questionnaire developed by the Leibniz Universität Hannover, which has been used since 2011 to determine student satisfaction and the quality of secondary vocational schools in Lower Saxony. The questionnaire was piloted and then divided into three main and five sub-indices using factor analysis. The data collection itself was carried out online in five secondary vocational schools of various sizes and education authorities; 2,086 questionnaires were collected from students and 5 were filled out by principals. Once the data was collected, basic calculations of average values, relative frequencies, and interrelationships of responses in individual factors were performed using descriptive statistics methods.

1. Theory

Over the last decades, various Quality Management Systems have been developed, differing according to their place of origin or focus. There are two concepts that are historically anchored and most frequently used in the European environment. ISO (International Organization for Standardization), based on the requirements defined by standards (ISO 9000), and the concept of TQM (Total Quality Management), used practically within the framework of various models, most oftenly in the form of EFQM Model of Excellence, or CAF self-assessment framework (Nenadál, 2015). These customer-oriented Quality Management Systems are utilized as tools to ensure excellence and quality and are currently being used in education

systems in various European countries. However, there are very few studies that will confirm, whether these systems are able to carry out sustainable changes that lead to the improvement of school processes or school results.

Due to the development of positive psychology, there is an increasing amount of research focusing on the pupils' satisfaction and the school climate. This research often address specific areas of satisfaction at schools, teachers'satisfaction (Zarzuelo et al., 2018), or deal with aspects of the school climate in a wide range of issues. Pupils' satisfaction with the school can be viewed from different perspectives and time dimensions. It is influenced by a number of factors linked to certain student, teacher, environment, or school. The results of the TIMMS 2015 survey, as well as the latest WHO Health Behaviour in School-aged Children (HBSC) report, consider Czech pupils' satisfaction with the school to be the lowest among the countries surveyed; the pupils' positive feelings regarding attending school continue to decline (Inchley et al., 2020). Czech students do not like going to school. The results found that quality-oriented pupils in quality oriented schools can raise the profile of quality management systems, present the practical implications of their use, help them become implemented more frequently by secondary vocational schools, and ultimately help to prevent the negative trend mentioned above.

2. Methodology

The aim of the survey was to find the level of satisfaction of students and principals in schools that use one of the Quality Management Systems and to compare how the opinions of students and principals differ in these schools. Two hypotheses were tested. The first one verified the overall impact of Quality Management Systems on students' satisfaction with their school, with the quality of teaching, teachers, and technical equipment. The second hypothesis verified the similarity of the opinions of students and principals.

A standardized, professionally translated questionnaire was used to measure students' satisfaction in German schools. The questionnaire contained 41 items; respondents answered on a four-point Likert scale. For the collection of principals' data, the questionnaire was expanded by a section which, in the form of open-ended questions, sought basic information about the school and the principal and mapped his motivation and experience with different Quality Management Systems. Equal conditions for filling out the questionnaire were secured by the author of the survey given the electronic form using Microsoft Office 365. Students filled out the questionnaire via mobile phones. The survey was anonymous. The questionnaire was piloted at a Prague secondary vocational school from April to December 2019 on a sample of 741 respondents.

Two basic requirements were established for the sample selection in the main survey. Schools were required to use QMS and to be directed by the same principle for the minimum of three years. For this purpose, 883 principals of secondary vocational schools from all over the Czech Republic were contacted by e-mail; data was collected exclusively from full-time students in the education categories "H", "L" and "M". Five schools took part in the research, two from the capital city: Prague, two from the Central Bohemian Region, and one from the Olomouc Region. As Table 1 shows, four schools were public, one was established by a private person.

Table 1: *Contextual indicators of the participating schools*

	QMS	Founder of the School	Characteristics / priorities of the school stated by the principal	Principal's experience	Management Education of the principal	Reasons for implementing the QMS
School 1	ISO, EFQM	City of Prague	Quality teaching in an above-standard environment and friendly atmosphere	17	Functional Studies II, courses, The Open University	Marketing
School 2	CAF	City of Prague	Modernity, difficulty, friendliness	19	Functional Studies II, courses, The Open University	Quality improvement
School 3	CAF	Central Bohemia	Expertise and context	3	Functional study II, courses, mentoring, coaching	Improving management processes
School 4	ISO	Private Person	Effective teaching, individual approach, inspiring environment, teachers with practical experience, internships, cooperation with companies	7	Functional Studies II, courses	Auditor's recommendation
School 5	CAF, ISO	Olomouc Region	The school has a supra-regional reach	12	Functional Studies II, courses	Improve the effectiveness of education

Source: author

The intention was to measure students' satisfaction, obtain objective evidence, verify theories and hypotheses, and determine causal relationships. Therefore, a quantitative methodology that allows data to be statistically processed and interpreted by a computer was chosen. The survey itself in schools was carried out in two stages.

First, a questionnaire was distributed to all principals of secondary vocational schools in the Czech Republic to find out the occurrence and use of Quality Management Systems, motivation and experience with their implementation, and expectations of students' satisfaction with their school. In the next stage, a survey mapping student satisfaction was conducted at the schools of principals who agreed with the distribution of questionnaires to students.

3. Analysis and interpretation

In order to verify the mutual relations, structure, and reliability of the questionnaire, a factor analysis was performed on the piloted data using the SPSS software. Nine factors were identified, these factors were named after the items that form them. The internal consistency parameter was calculated for those factors. The five factors of the highest importance include the quality of teaching, the quality of teachers, satisfaction with the school, technical background, and a good climate for learning.

For the main research, the data was a subject of a reliability analysis. Via the SPSS program the parameter of internal consistency was calculated for the index created by the average of all items (Cronbach's $\alpha = 0.922$) and then for two blocks of items (i.e. general satisfaction with teaching / teachers Cronbach's $\alpha = 0.898$ and attitudes towards the school Cronbach's $\alpha = 0.833$). Simultaneously with the piloting of the questionnaire for pupils, a questionnaire for school principals was prepared.

After collecting all the data in the main survey, data's analysis was performed using the

methods of descriptive statistics. Pivot tables and graphs of Microsoft Excel were used to clearly visualize the relationship between the Attributes. The data has been filtered and conditionally formatted. Immediately after the export, the school data was converted into an anonymized form and recoded on the scale of answers: strongly agree = 4, rather agree = 3, rather disagree = 2, strongly disagree = 1. The same procedure was followed for the questionnaires filled out by the school principals. The answers to the open questions given to principals were analysed separately.

The data in the main research was analysed by calculating the relative frequency and averages of selected questions, three main satisfaction indices and indices in five observed factors, which has been decided with regard to the exploratory factor analysis and reliability analysis of the data obtained during the piloting of the questionnaire. The average values of the respondents' answers for each question were calculated, both in the school and the pupil unit. The total index was calculated as the average of all questions. The satisfaction index was calculated from questions 1–24, which the correlation analysis indicated as primarily related to the satisfaction. The attitude index was calculated from questions 25-41, which focus rather on students' attitudes. The indices were further calculated in five observed factors. Given the nature of the questionnaire, high correlations between the indices were expected and therefore it did not make sense from a statistical point of view to work with individual factors. On the other hand because of the plan to give a feedback to the school principals, the factual aspect also had to be taken into account, as it was more beneficial for school principals to receive more differentiated feedback in several dimensions.

Using the "var.p" function, the variance in the individual indices was calculated for the individual students' and principals' indices. The correlation between the individual indices was calculated using the Pearson correlation coefficient, both for the answers of students and school principals. The index of students and school principals were correlated in individual factors.

4. Discussion and conclusion

Both main hypotheses have been accepted and can be considered valid. Based on the overall index and all sub-indices of the questionnaire, it can be stated that students' satisfaction at the monitored secondary vocational schools on a scale of 1 (least satisfaction) to 4 (highest satisfaction) for individual schools ranges from 3.01 to 3.50.

Table 2: *Overview of schools and their indices*

	Total Mean	Teaching Index	Teachers Index	Index satisfaction with school	Index technique	Index climate for learning
School 1	3,29	3,15	3,50	3,47	3,54	3,24
School 2	3,14	3,04	3,31	3,20	3,17	3,05
School 3	3,05	2,86	3,27	3,37	3,21	3,01
School 4	3,19	3,15	3,41	3,31	3,22	3,15
School 5	3,06	3,00	3,28	3,15	3,09	3,03
Mean 1-5	3,15	3,04	3,36	3,30	3,25	3,10

Source: author

The analysis of the relationship between the opinions of principals and students was viewed from a dual perspective, through individual questions and specific schools. From a comparison of the overall averages of students' and principals' evaluations, it is apparent that students' evaluation is in both cases significantly lower than the evaluation submitted by principals (difference 0.25). Comparing the connection between the views of students and principals across individual schools, it is obvious that the views of students in schools 1, 4 and 2 correspond more with the views of their principals.

The experience of the principal, resp. the length of his pedagogical practice in the given school, the degree of managerial education of the principal, the size of the school, the type of implemented management system and the school's preferences were taken into the account while considering the possible explanation. The unifying criterion proved to be the length of pedagogical practice (from 17 to more than 19 years), managerial education at the level of functional study II and the focus of schools on the area of the school climate. On the contrary, the influence of the type of QMS used (ISO, CAF and EFQM), the influence of the education authority and the influence of the school size (from 175 to 866 students) were not proven.

As Table 2 shows, comparing the views of students and principals through questions on specific factors proved that students rated the items in the "teachers" index the best. This partly explains the trend observable when comparing the average of students' responses in individual indices, where the differences in the index are very small. On the contrary, the extreme difference in the evaluation of students and principals is in the "school" index, which represents partial satisfaction with the school. Within the monitored questions, students of schools with a QMS evaluated the school environment, technical equipment of the school and the use of information technologies very positively.

When comparing the average responses of students and school principals, significant differences in assessment were found in most of the items, however, the largest differences concerned items that did not fall into any of the observed factors. They concerned the quality of school meals. School principals evaluate this area significantly better than their own students. Within the individual questions, students evaluate positively the school safety, the availability of school management if necessary, the school premises, the behaviour of their teachers and the level of professional knowledge of the teachers. Teachers' interest in students' personal or professional development is being evaluated the lowest out of the monitored questions by students. In this respect, the evaluation of students is almost identical to the evaluation of principals.

The study revealed that school principals are significantly less critical than students in evaluating their school. Especially in the evaluation of their availability, technical equipment, school organization, staff friendliness and the quality of school meals. All school principals are unequivocally convinced that students have the opportunity to reach out to them if necessary, however, students in both groups are much more sceptical about this item. School principals' absolute evaluation of issues related to the school technical equipment and the awareness of students in the organization field also corresponded. There are very large differences in students' and principals' evaluations of these issues.

Ensuring the quality of school's technical equipment is a priority for these principals as the absolute values of school principals with the QMS in the questionnaire suggests. However, students do not perceive this fact. Other major differences between students' and principals' evaluations are in the items focusing on the teachers' behaviour toward students and students' motivation to study. Students rate these items lower than principals. On the contrary students evaluate their general satisfaction with the school, the preparation of teachers for teaching and the use of information technology higher than principles. The minimal differences between

pupils and principals in this group of schools were in questions mapping the school climate, school premises and the quantity and diversity of the subject matter.

It is difficult to find the common causes of the findings in the framework of this survey. These are schools of different sizes, from different localities, established by different education authorities, and the motivation of principals to implement a QMS is different. However, quality management systems seem to be used by principals who are more educated in quality management and care about the quality in education.

The implemented survey has its limits. It should be noted that while the average of student evaluations includes the results of 2,086 questionnaire from students of schools with a QMS, the evaluation of principals is only the average of the evaluations of five school principals. The results obtained are therefore more prone to extreme values. In the follow-up research, a larger sample of schools and principals should be used, to examine existing findings in more depth (e.g. areas of students' loyalty to their school or teachers' authority), compare the results with a control group of schools, or combine the existing findings with an external evaluation. The results of the survey can be used for self-evaluation of schools.

Due to its high reliability and consistency, the questionnaire used in the survey is a suitable choice for secondary and higher vocational schools and can serve as an alternative to the other questionnaires mapping the school climate that are already being used. Online data collection via mobile phones would, for example, enable the Czech School Inspectorate to collect data at the school in a matter of days as part of regular control and evaluation activities during a comprehensive inspection of schools.

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Learning difficulties during a pandemic – reflections of students from the University of Warsaw

Problémy s učením během pandemie – úvahy studentů Varšavské univerzity

Ewa Dębska

Abstract:

The aim of the text is to present the results of qualitative research into the factors hindering the learning process of students of the University of Warsaw engaged in online learning during the epidemic. The results indicate that the changes in the organization of learning cause difficulties in four areas: cognitive, social, emotional and logistic.

Key words:

Reflection, pandemic, students, difficulties, remote learning.

Introduction

In March 2020 Polish universities introduced distance learning due to the COVID-19 epidemic. In order to continue the education process both the academic teachers and the students had to change their accustomed ways of conducting and participating in classes and switch to extensive use of modern technologies. I found it cognitively interesting to study the students' views on their own learning in this new, difficult situation.

While conducting research, I wanted to create a space for students to reflect on the process of their own learning. Reflection on one's learning leads to conscious planning, optimization and ongoing control of its course, and consequently to conscious construction of the learning environment and development of one's own effective techniques (Jackson, 2004). Reflection as a competence should be specifically taught because not every person activates it on their own.

Methodology

The aim of the research was to identify the difficulties faced by students participating in remote learning during the COVID-19 pandemic. The study was based on students' statements about the barriers and limitations present in the learning process in the situation caused by the pandemic. Therefore, the research question was: What areas of difficulties did the interviewees identify while studying during the pandemic?

I collected the research material in January 2021, and the presented results are part of a wider research project. The research participants were 9 female students of the 3rd year of undergraduate studies at the Faculty of Pedagogy of the University of Warsaw. All the research participants similarly define learning as a process which leads to mental changes with a relatively permanent structure (Illeris, 2006), and they treat learning as a process of

conscious and deliberate acquisition of knowledge, skills and social competences, mainly related to functioning as a student.

In the interviews, conducted in online meetings due to lockdown, I used the standardized open-ended interview and I designed a research tool in the form of an interview structure. I prepared two types of questions: basic and additional. First, I asked the basic questions, which were open-ended and left the interviewee a lot of freedom to share their opinions and experiences. In a situation where the interviewee omitted the issue of interest to me, I asked the more detailed additional questions. Thanks to this I obtained full and structured answers to the questions. The analysis of the research material was carried out by applying the following 3-stage procedure:

1) Collecting the interviews and consents to use them for scientific purposes, making transcripts, isolating and analyzing individual narrative passages, coding the narrative fragments, transforming the raw text into a summary of each passage, grouping difficulties according to the emerging dominant aspects and recurring codes, reanalyzing the coding system and reorganizing the codes;

2) 3-level analysis:1.comparisons within the selected category, 2.case-by-case analysis to verify the coherence and logic of each person's statements 3.comparison to study the similarity and contrast between cases;

3) Interpretation of the content according to the codes, thanks to which it was possible to identify the difficulties which the interviewees considered the most significant.

As a result of arranging the statements into passages and their categorization, four areas of learning difficulties of the participants of the research emerged: cognitive, emotional, social, and logistic.

The first area relates to **cognitive** functions such as memory, attention, thinking and perception. The students mainly emphasize the difficulties in maintaining concentration during classes. The ability to focus on a strictly defined stimulus or precisely described issues requires conscious action and involves a lot of effort. Natalia says about it:

During a pandemic, I find it difficult to concentrate during classes. It's hard for me to pay attention. It is almost impossible. When I'm in a lecture hall, the space forces me to concentrate better than at home. I can hardly learn during such classes, since although the lecture is interesting, my focus somehow disappears. Despite my efforts, something else can always compel my attention (Natalia).

In remote learning, temporary distraction results from access to various distractors such as receiving phone calls and text messages and feeling the urge to react to them, activity in social media. At the same time students believe that the teachers' requirements have increased during the pandemic.

Remote learning requires more work from me than stationary learning. In fact, I have the impression that I have to read something all the time, prepare something, sit in front of the monitor. I have to remember all the time what to do and when. It happens that I am so tired that I do not write things down, and then I forget (Magda).

The interviewees often feel overwhelmed, because for almost every class they have to prepare materials, read literature, and present the results of their work during classes or upload them on the university platform. It can be presumed that they have difficulties related to not knowing or not using learning techniques. They talk about *problems with delivering work on time* (Magda), *learning lots at a time, i.e. preparing for the exam 3 days before the deadline* (Anna), *starting to learn from easier content, which results in not having enough time to assimilate more difficult content* (Natalia), *ceasing to take notes on paper and using computer*

applications instead (Dorota), which is not conducive to the creation of mental images representing the content being assimilated (Callender & McDaniel, 2009). The subjective feeling that one puts a lot of effort into learning and does not always achieve the expected results leads to feeling exhausted and to decreased intellectual potential. As reported by Anita:

> *Due to the pandemic, I do not feel up to doing anything at the moment. I completely do not want to do anything for the courses. I think that this being locked up and moving between the classes and the kitchen is exhausting me. I have 15 minutes to make tea and then there's the next class. It is incredibly exhausting* (Anita).

Concentrating and remembering are crucial elements in the acquisition and consolidation of knowledge. Motivation is also of great importance in the learning process (Deci & Ryan, 1994; Ryan & Deci, 2017). The interviewees draw attention to the uniformity of the classes. Regardless of the attractiveness of the message and the variety of activities: competitions, group work, chat entries etc., all lectures and workshops take place in the same space – in the one where the interviewees have created a learning station for themselves.

Social space concerns direct contacts with the teachers and other students. Aleksandra speaks of a sense of social isolation.

> *Now it's work, college, home, friends – most of my life is at home. I don't meet a lot of people because I don't go to university. And one becomes so alienated – I see that in myself. At the moment, relationships are harder for me. On the one hand, I miss people, on the other hand, I have this unease, that maybe not.* (Aleksandra)

According to the research conducted at the University of Warsaw, 41% of students declare that their sense of loneliness is stronger than before the pandemic (Mazur et al. 2021). Another issue that the interviewees draw attention to relates to the feeling that the opportunities to learn from each other have been diminished.

> *Beforehand, when I did not understand something or did not know, I would ask someone from the group, in the class or in the corridor, or in the cafeteria over the meal. And now, if I have to arrange a special appointment with someone, I quit* (Michalina).

In the opinion of research participants, remote education is not conducive to joint problem-solving or to strengthening friendships. Additionally, Kinga notes:

> *I need people to learn. For me, cooperation is very important, working in groups, doing projects together – it was very educational. Because the hands-on learning and teaching appeals to me. Remote learning is awful, I can't cope with it* (Kinga).

The ability to work in a team is now a key competence, and employers consider it very important (Budnikowski et al. 2012).

Students also notice a change in the teacher-student relationship. When contacts with the teacher are carried out through a communication medium building the relationship is more difficult, even in synchronic classes. In the light of the interviews, the teachers still focus on the student, analyze his/her thoughts and introduce effective methods of learning (Anita, Magda, Kinga). However, it is only through personal contact that one can build the interpersonal relationships that allow the teachers to pass on not only knowledge, but also their values and passion for learning. Even if the student is aware of the ethical behaviors and professional standards of the teacher's work, he/she has a limited ability to learn them due to the lessened possibility of observing the way the teacher functions in the real life.

The **emotional space** is dominated by negatively marked statements. One of the students shares her concern:

> *When I am to get up in the morning, I already think about when I will be able to go to bed again. I constantly feel too weak to get out of bed at all. It overwhelms me and worries me, because before the pandemic I liked to get up earlier, now I feel tired all the time* (Anita).

It seems that the symptoms of dysania may result from a depressed mood or from chronic fatigue caused by spending time in front of a computer screen for a long time. Negative emotions such as anxiety, anger, boredom, exhaustion are also reflected in the results of quantitative research carried out at the Pedagogical University of Krakow (Długosz, 2020). The emotional condition of the research participants is also visible in psychosomatic symptoms such as back pain and abdominal pain.

Permanent migraines are a part of my life, constant sitting in front of the monitor when I have to read texts, write essays, take part in classes results in neurological pains in the evening (Anita).

Sitting and looking at the computer screen is not very good for you, my eyes and back hurt (Magda).

The times of the Great Depression of the 1930s were the context for the emergence of a neurotic personality (Horney, 1935). Deloitte's research shows that Millennials are pessimistic about their lives, professional situation and the world around them (Deloitte, 2020). The pandemic prompted the International Labor Organization to call people under 25 "the Lockdown Generation".

The last area of difficulty, the **logistics**, refers first of all to the tools necessary to carry out remote learning: the quality of the internet connection and the hardware. These are difficulties arising from the fact that

(...) the microphone will not work with the computer (Natalia)*,*
or as Kinga says:

An outdated computer or a slow laptop going down often certainly do not help in active participation in classes, they make it difficult not only to listen, but also to perform various activities (Kinga).

Secondly, there are logistical difficulties resulting from living with relatives who perform their professional duties at the same time.

Unfortunately, I share a room with my sister, so it often happens that I listen to interviews in the kitchen and she works in our room. Mum works in the living room. We try not to disturb each other, but it is difficult (Dorota).

The issue of learning habits is also interesting. Monika and Aleksandra mention the place where they study as a difficulty:

Unfortunately, I cannot concentrate at home. There's always 500 things to do around me. I've never been able to learn at home, even before the pandemic I always went to the library or cafe to learn somehow (Monika).

I always prepared for the session in the library, it was the only place where I could focus (Aleksandra).

Undoubtedly, the learning conditions are an important factor in remote education, which is also shown in the literature. The quality of the Internet connection and computer, size of the apartment, number of co-inhabitants influence the quality of this process (Alruwais at al. 2018).

Conclusion

The research results give grounds for some conclusions. Developing e– Competences (Schneckenberg, 2010) required for the effective use of materials, tools and resources available on the Internet seems to be crucial for the education process as well as for the efficient performance of everyday activities, e.g. ordering food (Bucholtz at al. 2015). The emergence of the social space as an area of difficulty may indicate the students' need to create an academ-

ic community. It can be predicted that remote learning, despite many advantages, is not likely to replace group activities.

Studying the difficulties faced by students (compare research: Kyungmee et al. 2021; Akdeniz et.al 2020; Al-Tammemi et al. 2020;) is important, because thanks to reflection they can acquire knowledge more effectively (Boud et al. 2013), but also in order to create an effective strategy for the development of distance learning which will enable students to study at universities around the world. It is also worth undertaking qualitative research into the views of teachers on the challenges as well as the benefits of distance learning (compare research: Akour et al. 2020; Nuere, de Miguel 2020) and into the possibility of implementing some of its elements in the future academic work.

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Analysis of the child's self-concept as a starting point for the activities of the educator

Analýza sebepojetí dítěte jako výchozí bod pro činnost pedagoga

Zdeněk Svoboda, Arnošt Smolík, Jan Tirpák, Renata Šádová

Abstract:

The paper is a partial output of broader research and publication activities carried out with the aim of improving and thematically enriching the process of undergraduate preparation, as well as further education and professional development of school staff for institutional and protective education. One of the basic tasks of the staff of the above facilities is to achieve qualitative changes in the structure of the child's personality. An important component of the personality that should be the focus of attention in the educational process is the area of the child's self-concept. Within the text, we present partial results of research focused on the self-concept of children with severe social deviation. The data were obtained through the Czech standardization of Piers-Harris Children Self-concept Scale 2 – PHCSCS-2 in the environment of children's homes with a school.

Key words:

Further education of teachers, professional development, institutional care, self-concept, severe behavioral disorder.

1. Introduction

The area of alternative educational care is a segment of education that places increased demands on the quality of pedagogical activities. As part of the results of our previous research activities (Smolík&Svoboda, 2012; Smolík, 2016) focused on the activities of school facilities for the performance of institutional and protective education, we identified significant reserves in their employees. These consist, among other things, in the insufficient consideration of the starting points related to the personality of children when setting educational goals.

Current legislation stipulates that the child's stay in this type of facility should correspond as much as possible to the child's normal life in the family and in society, of course considering the individual needs of children diagnosed with a behavioral disorder. Workers in alternative care facilities therefore have the task of creating a safe environment for children, which is the basis for mutual trust, cooperation, open communication, development of the child's personality, education for values, self-awareness, and self-esteem of the child. This experience is often contradicted by the experience of children in institutional care and there is critical impact on physiological health and mental well-being throughout their lives (Blaisdell, Imhof & Fisher, 2019; Boparai et al., 2018).

Adverse effects of negative experiences are associated with the subsequent increased incidence of diseases from diabetes, obesity, heart problems, to threats to mental health in adulthood (Berens&Nelson, 2015; Metzler, Merrick, Klevens, 2017). We are aware that the

requirements for the implementation of any more sophisticated approach in the field of pedagogical practice are usually associated with higher demands on the competencies of persons implementing educational activities. It is therefore necessary to pay particular attention to personnel issues of work in alternative educational care facilities with a focus on the educators of these facilities and their competencies. (Smolík & Svoboda et al., 2012).

Competence in terms of pedagogy is a set of educational requirements, including essential knowledge, skills, and abilities universally applicable in everyday work and life situations. (Veteška, 2010). However, they cannot be conceived as the formal attainment of a certain level of education. The real qualification of an employee is formed and deepened not only continuously with his work practice and gaining work experience, but also with gaining professional and personal skills. These consist, among other things, in considering the starting points related to the personality of children in setting educational goals. One of the conditions for the creation of an authentic, internally integrated, and socialized personality of the educated person is, in our opinion, the development of the ability of children to have an adequate self-concept in school facilities for the performance of institutional and protective education.

2. Theoretical basis

Self-concept itself can be defined on several theoretical levels. Most often, this term refers to the perception of oneself in relation to important aspects of life. It is necessary to realize that self-perception develops mainly in the interaction of an individual with the environment in early childhood and from the approach and behavior of others to the child. It is also influenced by biological and cultural factors. Self-perception then also shapes self-assessment approaches and feelings that have important organizational and motivational functions. In response to changes in the environment, developmental changes or changes in priorities and values, the individual's self-concept may gradually change. However, these changes usually do not occur rapidly or as a result of isolated experiences or interventions (Piers & Herzberg, 2015).

Thus, self-concept can be perceived as a certain view of oneself and a subsequent summary of these ideas and evaluative judgments. We are talking about the perception of both internal and external aspects of personality. By gradually acquiring information about oneself, self-concept develops. We get to this information both on the basis of our own judgment when reflecting on our activities and mental processes, and through the feedback provided from the environment. (Blatný & Plhaková, 2003).

Factually and terminologically, this aspect is anchored in terms denoting such dimensions of self-concept as self-esteem, self-assessment, self-confidence, self-trust, or self-awareness (Nakonečný, 2009). These terms are quite commonly used by experts, but their meaning is not theoretically clear and there are basically no uniform definitions. Thus, the terms are often confused or used in different meanings. However, self-concept is inherently phenomenological. It cannot be observed directly but must be derived from the behavior or expression of the individual himself. The cognitive aspect of self-concept is therefore based on all knowledge about oneself and their organization. Subsequent and gradual growth of information takes place through feedback from the environment or through continuous observation of one's own activities (Blatný, 2010).

Self-concept is relatively stable. Although it is influenced by experience, it does not change easily or quickly. Although a child's potential self-concept may be enhanced by a positive experience, it is unlikely to be due to a brief, single, or superficial intervention. (Piers&Herzberg, 2015). The self-concept of the individual is constructed in the process of socialization, in mutual interaction with the social environment (Helus, 2018). Self-esteem is an important part

of self-concept. Both external and internal factors influence the development of self-concept and self-esteem. Among the external ones we include, for example, the emotional acceptance of the child by people close to the relationship, evaluation of performance by authorities or confrontation with social and cultural norms and values. Internal factors include the type of emotional experience, temperament, social skills, and self-reflection skills (Thorová, 2015).

Here it is necessary to mention the important specifics of alternative educational care. In this environment, the importance of the reference group is higher than in the life of a child growing up in a family. It depends, of course, on the circumstances at which age the child entered the alternative care system and what previous experience he/she has with her/him. Whether she had the opportunity to experience family life with relatively functioning parents, or whether the role of the family is replaced by educational care from the early developmental stages of the child (Svoboda et al., 2020). Self-concept is experienced and expressed differently in different stages of development. In early childhood, the main goal is to differentiate oneself from others and create a reciprocal relationship with primary caregivers (Piers&Herzberg, 2015). During the preschool period, the child moves more, establishing social relationships with other children and adults. The self-concept in this period is based mainly on the child's experience in these areas and on the behavior and attitude of the parents.

On the contrary, for school children, school results and relationships with peers contribute to self-concept. Therefore, school and education form a separate and important chapter in a child's life, which must be given special attention to, especially for children raised in the regime of institutional education. Motivation and attitude towards school are particularly important in the period of older school age. Adolescents build their own identity in each period, try to understand themselves, assess their own appearance more critically, think about themselves, strengthen the right relationship to school and school responsibilities. All these aspects mentioned by us form the overall self-concept of pubescents and contribute to the development of their personality. The issue of children's self-concept at the second stage of primary school is therefore, in our opinion, a particularly important topic in terms of comparing the influence of family and institutional education (Svoboda et al., 2020).

3. Methodological background

The Piers-Harris 2 Child and Adolescent Self-Concept Questionnaire is a 60-item self-assessment questionnaire. The standardized variant used in our research is intended for children and adolescents aged 9-18 years. Questionnaire items include statements that describe how people may perceive themselves. Respondents choose between yes-no options depending on whether the statement applies to them. The test also includes six subscales evaluating specific areas of self-concept. It is behavioral adjustment (BEH), intellectual and school status (INT), physical appearance and attributes (PHY), freedom from anxiety (FRE), popularity (POP) and happiness and satisfaction (HAP). Subscales of self-concept give total score (TOT).

Achieving a higher score expresses a more positive self-assessment in the given area. Among other things, the tool is used to evaluate psychological and educational interventions, to determine the relationship between self-concept, other characteristics, and behavior, and to monitor changes in self-concept over time. As this is a self-assessment questionnaire, its use is not recommended for children who are unable or unwilling to cooperate in completing it. This means, among other things, that the questionnaire is not suitable for children who are overly hostile, non-cooperative and non-communicative.

Also, for children who tend to exaggerate or distort or who are so distracted. Their answers do not sufficiently reflect their feelings and behavior. Children with limited language skills may also have difficulty filling in (due to language background, neurological damage, moder-

ate or severe mental retardation). Respondents representing any of the above categories were excluded from our research survey.

The primary standard score is the so-called normalized T-score (chart 1). To create these scores, the original distribution of gross scores is converted to approximate the normal distribution. The normalized gross scores are then converted to T-scores that have a mean of 50 and a standard deviation of 10. The use of normalized T-scores means that the obtained T-score value corresponds to the percentile order of all questionnaire scales. This allows easy comparison of differences between individual subscales of the questionnaire. Normalized T-scores also make it possible to determine the child's position relative to the standardization set. It is therefore vital from the point of view of research to create category T-scores, which express the position of the individual compared to the average of the standardization set.

Chart 1: Interpretation of the range of T-scores of the Piers-Harris 2 questionnaire of self-concept of children and adolescents.

T-score range	Percentile range	Interpretive description
Celkový skór (TOT)		
≥70T	≥98	significantly above average
60T-69T	84-97	above average
56T-59T	72-83	higher average
45T-55T	29-71	average
40T-44T	15-28	lower average
30T-39T	3.14	below average
≤29T	≤2	significant below average
Subscales		
≥56T	≥72	above average
45T-55T	29-71	average
40T-44T	15-28	lower average
30T-39T	3.14	below average
≤29T	≤2	significant below average

Source: Piers, Herzberg (2015, s. 21)

4. Survey results and their discussion

We conducted our research on a sample of 70 respondents aged 11-14 years with compulsory institutional education, who are placed in an orphanage with a school. The average age was 13 years. The research group consisted of 61 boys and 9 girls. The research group was not further internally differentiated in terms of this significant gender disproportion. Multiple comparisons of data within the analysis of variance ANOVA were performed using Statgraphics Centurion XVIII software at the level of significance $\alpha = 0,05$. From the calculations of the ANOVA-test, we were mainly interested in the value of the test criterion F and its corresponding value of the observed level of significance P. If the P value was less than 0.05, we subjected the data to post-hoc analysis.

In the statistical analysis, we chose specific methods according to the type and distribution of data. Data were first tested by the Shapiro-Wilk normality test (Shapiro&Wilk, 1965).

For comparison within the individual monitored subtests, we also used the Mann-Whitney U-test, which is designed to compare two independent groups (Mann&Whitney, 1947). We subsequently determined a statistically significant difference between groups from a post-hoc analysis based on the Dunn method (Dunn, 1964).

With regard to the targeting of the research, we chose a normalized T-score as a key indicator, which corresponds to the percentile order of all questionnaire scales. The percentile is a statistical parameter determining the position of the measured value within the entire population of the same age and sex. It thus expresses the relative position of the respondent of the research survey in relation to his peers. As part of our research, we evaluated the resulting T-scores in the monitored areas in the Questionnaire of self-concept of children and adolescents Piers-Harris 2 for children placed in the ordered institutional education in a children's home with a school.

Depending on the measurement of the analysis of the ANOVA variance, we found two basic values. F value was 40.25 a P value 0.00, therefore smaller than 0.05. Therefore, the observed variances are not the same between the compared files. The interval graph 1 also demonstrates the whole situation, when BEH = 36.44, INT = 39.96, PHY = 45.51 FRE = 39.33, POP = 38.76, HAP = 38.54, TOT = 39.76.

Char. 1: Interval graph of results depending on the normalized T-score in individual test subscales in children with severe social deviation
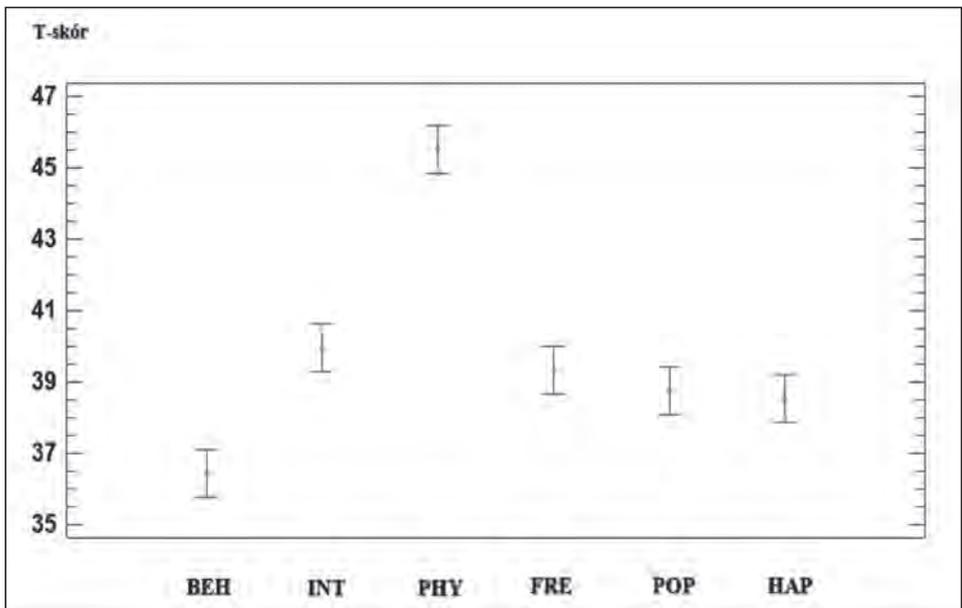
Source: own processing

Chart II: The obtained values of post hoc analysis of all results depending on the normalized T-score in individual test subscales in children with severe social deviation

------	BEH	INT	PHY	FRE	POP	HAP
BEH	------	**p = 0.00**	**p = 0.00**	**p = 0,00**	**p = 0.00**	**p = 0.00**
INT		--------	**p = 0.00**	p = 0.66	p = 0.11	p = 0.17
PHY			---------	**p = 0.00**	**p = 0.00**	**p = 0.00**
FRE				---------	**p = 0.03**	p = 0.84
POP					---------	p = 0.72
HAP						----------

Source: own processing

Table II shows the values of post hoc analysis of all results depending on the normalized T-score in individual test subscales in children with severe social deviation. The bold numbers in the table specifically indicate between which test areas there are statistically significant differences at the 5% level of significance. In comparison with the findings in this group of research, statistically significant differences were found, especially in the scale of adaptability and physical appearance.

It is necessary to realize that the child's self-concept is not only based on the overall perception of himself (represented score TOT = 39.76), but also on the specific evaluation of different feelings, abilities, and behaviors. This opinion assumes that children may see each other differently in different areas. Thus, subscales can identify areas in which the child is relatively confident and areas in which he or she is vulnerable. The findings may be useful for setting goals for further pedagogical intervention. Because children do not have the same need for secondary gains as adults, a low score in this test usually really means low self-esteem (Orel et al., 2016).

The TOT score is the most reliable and most researched measure. TOT is the number of items answered in the direction of positive self-concept, i.e., it reaches values from 0 to 60. TOT is an indicator of overall self-concept. However, the research found a low score ($\leq$39T), which is typical for children and adolescents with serious doubts about their own value. Children and adolescents usually assess themselves negatively in several specific areas. Checking the individual items and subscale scores can help determine the nature of this problem. The self-concept of these children is such that they see themselves as less talented or capable than their classmates. Because of this, they may be afraid to get involved in new activities, because they are afraid that their shortcomings will manifest themselves. Low TOT scores are often associated with mood and behavioral disorders (Piers&Herzberg, 2015). Negative bias is relatively rare in children and adolescents, so low TOT scores usually reflect real self-esteem problems.

If we continue to focus on individual subscales, we found low scores (BEH = 36.44) for adaptability. Children and adolescents who score 39T or less on the BEH subscale acknowledge significant behavioral problems. In their opinion, they often cause problems and are unable to follow the rules set by parents and / or teachers. The nature of these problems can be determined by examining the individual items. Individual answers can reveal whether behavioral problems occur more at school or at home, whether the child behaves aggressively and whether he or she acknowledges his responsibility for the problems or rather attributes them to the environment. The BEH subscale contains 14 items and measures the detection or denial

of problematic behavior. The content of the items relates to a specific behavior ("*I am often in conflict with others* ") to more general statements relating to problematic situations at home or at school ("*Our family has problems with me*").

Intellectual and school status (INT = 39.96) is below the average within the examined sample. The INT subscale consists of 16 items that reflect how the child perceives his abilities with regard to intellectual and school tasks. The items are also focused on school satisfaction and children's ambitions. Some items deal with how a child's intellectual abilities affect important relationships ("*Friends like my ideas* "). Children and adolescents achieving below-average scores on the INT subscale acknowledge numerous difficulties in completing school assignments. They may also have a more general feeling that they are failing school and do not have sufficient skills for school success. The low INT score may form part of an overall low self-esteem or may reflect an isolated deficit in self-concept that is subsequently compensated in other areas or behaviors.

The average score (PHY = 45.51) was found for the physical scale and characteristics of the subscale. The PHY subscale consists of 11 items and finds out how a child evaluates their appearance and characteristics (for example, leadership skills and the ability to present his ideas). Children who score average on the PHY subscale express positive and negative evaluations of their own appearance and personal qualities, with positive evaluations outweighing negative evaluations. Because PHY items cover several personality qualities, checking individual responses can help clarify the nature of negative self-esteem. If the PHY score is in the lower average range (40T-44T), the child expresses greater dissatisfaction with his own appearance and characteristics than a typical individual from the standardization set, but the overall level of self-criticism is still within the norm. However, these conclusions were not confirmed in this research.

Low score was found for the subscale of non-anxiety (FRE = 39.33), consisting of 14 items. These reflect anxiety and dysphoric mood. Each item captures a group of specific emotions, including anxiety, nervousness, shame, sadness, fear, and a general sense of neglect by others. Children who score 39T and below on the FRE subscale admit severe problems with dysphoric moods. These children may feel anxious about specific activities at school (such as writing tests, exams in front of a blackboard) or may complain of generalized anxiety that manifests itself in many areas of their lives. Low FRE score can also be associated with dissatisfaction with appearance, a sense of social isolation and a desire to be different overall. The FRE scale is more sensitive than other subscales to severe mental disorders, such as mood disorders or anxiety disorders. The individual items on this scale capture a number of specific emotions, including anxiety, nervousness, shyness, sadness, fear, and a general feeling of neglect by others.

Popularity (POP = 38.76) consists of 12 items and represents children's self-esteem in the field of social functioning. The content of the items covers perceived popularity, the ability to make friends and the feeling of being involved in activities such as games and sports. Scores of 39T and lower are achieved on the POP subscale by children who are unhappy in the area of their social functioning. These children are dissatisfied with their friendships and may feel that they have no friends. They feel that they are being ignored or that they are being ridiculed by their classmates. Low POP scores may reflect shyness, lack of interpersonal skills, or personality traits that lead to the child being isolated from others. Children with learning difficulties or physical disabilities may feel rejected by peers, which also leads to a low score on this subscale. Mood disorders are often associated with reported interpersonal deficiencies. Children with low or very low POPs can benefit from interventions aimed at improving social skills.

The last subscale is Happiness and Satisfaction (HAP), which consists of 10 items. They

reflect a feeling of happiness and contentment with life. Most subscale items are general, only one relates to a specific personality trait ("*I have quite a pretty face*"). As for the results of our research, they are in the low score range (HAP = 38.54). Children with low HAP scores tend to report general unhappiness and dissatisfaction with themselves. They can be critical to my physical appearance, ability to communicate with others, and my basic personality traits *("I'm a good person")*. Like the FRE subscale, the HAP subscale is strongly associated with emotional disorders. Low HAP scores often occur in children who have been diagnosed with a mental disorder, including a behavioral disorder or anxiety disorder.

In terms of recommendations for other similar research of this type, we would consider it appropriate to focus primarily on self-concept in terms of age of respondents (more advanced adaptation can be expected) or in terms of gender. Some other characteristics (such as learning disabilities) can also be an important predictor of children's self-success. However, these variables were not the subject of this paper.

The presented research results correspond to the stated theoretical findings and document the relevance of the influence of self-concept on individual subscales in the implemented research. We believe that our area of self-concept, depending on the development of personal, communication, social and emotional competencies of these children, should, from our point of view, come to the forefront not only of research interests, but especially of teachers in these facilities. (Svoboda et al., 2020).

Conclusion

In the paper, we focused on the analysis of the child's self-concept as one of the starting points of the educator's activity in the facility of substitute educational care. In our opinion, the child's self-concept is an important prerequisite for work leading to complex changes in the personality of a child with a serious social deviation. In the paper we dealt with the target group of children with ordered institutional education in a children's home with a school. The research itself was performed using the standardized questionnaire Piers-Harris 2 Self-Concept of Children and Adolescents 2.

We implemented the research plan on a sample of 70 respondents aged 11–14 years. The achieved results are comparable with some previously published conclusions in the field of emotional and behavioral disorders in children raised in the environment of institutional care (Schor, Stindley&Malspeis, 1995; Cole&Kumchy, 1981; Robinson, Jenson & Yaffe, 1992; Kovacs, 1981). An interesting finding of this research is, for example, a significant inverse correlation in children with behavioral disorders. These children describe themselves in terms of self-concept as physically incredibly attractive and having many friends. However, this does not correspond to the results in other categories representing rather low values of self-concept. These conclusions are typical for children with behavioral disorders and were confirmed by our research. Another finding of the cited studies is the finding that life stress plays a very important role in the mental functioning of the child and is subsequently significantly related to lower self-concept scores in all scales of Piers-Harris Children Self-concept Scale 2. These findings point to a relationship between environmental stressors and children's self-esteem.

In terms of the focus of the research, it is necessary to consider the fact that children's homes with school are for children with severe social deviation, who often have a consolidated social experience different from the general population. Their social experience and consolidated social strategies often lead to the final judgment "I am different". Difficulties and often deficits in the cognitive or emotional area of self-perception in the context of social reality, as well as problematic experiences with other people (distrust of others, experience

with rejection or non-admission) enter subsequently and cyclically into the social interactions of these children.

They significantly affect not only their quantity but also their quality. In clinical practice, the pedagogue often encounters in the extreme case a pathological loss of confidence in himself and in others. The result is a different level of negative self-concept. If the pedagogue-educator is to be functionally and well prepared for educational activities with children with severe social deviation, it is necessary to provide him with theoretical equipment and competencies so that he can not only grasp the topic theoretically and diagnostically but also connect with his personality and pedagogical skills. The topic of children's self-concept should thus resonate within the framework of undergraduate training and further education and professional development of teachers in the field of institutional education of children with a serious social deviation.

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Possibilities of realization managerial practice through virtual world

Možnosti realizace manažerské praxe prostřednictvím virtuálního světa

Eva Urbanová, Jana Šafránková

Abstract:

The paper is focused on the comparison of the results of research, which concerned the reflection of managerial practice by students of the study program School Management at the Faculty of Education, Charles University and took place in various forms. In the academic year 2018/2019 full-time and in the academic year 2020/2021 remotely, due to the COVID-19 pandemic, when schools were closed from March 2020 and full-time practice was not possible. The aim was to analyze the situation of professional practice in the specific conditions of a pandemic and to compare the differences in the transfer of experience to the principal of departmental schools and the acquisition of skills by students in full-time and distance form of managerial practice. Research question: What are the fundamental differences in passing on the experience of department school principals to students in the full-time and distance form of managerial practice. The results of the survey showed that another form of managerial practice does not affect the fact that internships are a beneficial and important part of the study for students.

Key words:

School principal, departmental school, managerial practice, experience, skills.

Introduction

In the context of a rapidly evolving and changing society, there is a demand for demonstrable use of educational results in practice and everyday life. In the training of future senior pedagogical staff, especially school principals, it is necessary to look for ways to link their theoretical training with practice in an authentic school environment, whose principal is able to pass on management competencies that are consistent with the profile of graduates of the School Management study program. The paper focuses on the comparison of the results of research, which concerned the reflection of managerial practice by students of the study program School Management and took place in different academic years and in various forms.

The aim was to analyze the situation of professional practice in the specific conditions of a pandemic and to compare the differences in the transfer of experience to the principal of departmental schools and the acquisition of skills by students in full-time and distance form of managerial practice.

1. Theoretical framework

Management is a very specialized activity that no major organization can do without. Management is a summary of all activities important for ensuring the operation of the organization. (Veber, 2014, p. 19). Technological developments and changes over the last decade have significantly affected the management of organizations. The development of a knowledge management strategy with the aim of achieving effective education also concerns schools. The main role is played by the school principal and especially the level of his competencies. (Ozmen & Muratoglu, 2010) The idea of sufficient training and development of both current and future school principals has been evolving in the Polish education system for 20 years. The professional development of the school principal's managerial competencies must be planned and organized as a long-term process, which must be supported by formal courses and training. (Dorczak, 2016) In the Czech Republic, school principals and their deputies, who want to achieve excellent performance in their schools, must pay special attention to the management of all staff (including teaching and non-teaching staff), as their skills, motivation and performance determine the required school results. (Šafránková & Šikýř, 2018) Considering that some university-based school director preparation programmes may not be properly training school directors for leadership roles, „grow your own" leadership development programmes have become more popular across the US. Principals consider educational activities related to human capital, executive management, school culture, and strategic operations to be „highly" influencing their role as school leaders. (Tingle, Corrales & Peters, 2017) The need for effective school leaders is widely recognized, but there is much less certainty that leadership behavior is most likely to yield-bring favorable results (Veteška, 2013).

School management is still the most developed part of education management, which is institutionally and legislatively enshrined in the Czech Republic. It focuses on the professional education of school principals, ie on the formation and development of their managerial competencies of various types. (Pisoňová, 2011, Pisoňová et al., 2014) Educational management, administration and leadership, as a field of study and practice, are now of global significance. Leadership and management are critical variables in differentiating successful and less successful educational organizations (Bush, 2004).

The competencies of managers in the field of school management are divided into four spheres – creating strategies, managing the pedagogical process, ensuring and managing the development of the school as an institution, management and development of human resources. Particular attention should be paid to vocational education and training to improve and develop appropriate key competencies that should characterize a good school leader. (Bitterová, Hašková, & Pisoňová, 2014) The school principal must be comprehensively educated in many areas with sectoral overlaps, must be an expert in school management and quality management of teaching with the ability to reflect external influences on education. (Iurea, 2017, Bolam, 2014) In a number of schools in New Zealand, the shadowing / mentoring component of the program has made it possible to understand the complexity of the principal's role by shadowing and mentoring experienced principals. Among other things, they managed to get a network of effective directors, and their experience led to a reflection on their professional development. (Service, Dalgic & Thornton, 2017)

In the Czech Republic, there is no obligation of prior systematic teaching in the field of school management, leadership, law or economics. The new director must have a prescribed pedagogical education and pedagogical practice determined by the type of school, but upon taking office he must constantly study in other areas, which results from his statutory responsibility for the school he manages. The preconditions for the performance of the activities of the school principal result from Act No. 563/2004 Coll., On pedagogical staff and on the amend-

ment of certain acts, as amended. In addition to meeting the prerequisites for performing the activities of a pedagogical worker (legal capacity, professional qualification for direct pedagogical activities, integrity, medical fitness and knowledge of the Czech language), he may be a director of a school established by the Ministry of Education, Youth and Sports, a region, municipalities or a voluntary association one who, no later than two years from the day he started working as a school principal, acquired knowledge in the field of school management by completing studies for school principals, either by completing the School Management study program or schools as part of further education of pedagogical staff. The competence of leading pedagogical staff must include the following areas – leadership, managerial, professional, personal, social, management and evaluation of the educational process. (Lhotková, Trojan & Kitzberger, 2012)

Therefore, in the training of future leading pedagogical staff, especially school principals, it is necessary to look for possibilities to connect their theoretical training with practice in an authentic school environment. The Department of Andragogy and Education Management at the Faculty of Education of Charles University offers current and future school leader´s education in the field of School Management. For several years, the course Management in Practice has been implemented and improved within this program, which connects students with the acquired theoretical knowledge in individual subjects of this program (management, law, economics, management of the pedagogical process, people management) with practical experience passed by directors in managerial practices. authentic environment of selected schools, thus helping the process of transforming knowledge into skills. Combining theory with practice helps managers on their way to professionalization. The aim of the meeting in the school field is in particular:

• solve current problems in the field of school management in an authentic environment,
• to connect the acquired theoretical knowledge with practice and to create competencies for students in a specific area of school management,
• to create optimal conditions for students to get acquainted with the widest possible range of schools and school facilities, or other workplaces,
• to create conditions for obtaining new stimuli and inspirations for students' own management work,
• convince students of the need for insight and comparison of different conditions in different workplaces,
• teach students to use these inspirations in everyday management work and thus strengthen their competencies,
• analyze the needs of managers and convince them of the need to ask questions and find answers to possible alternative solutions,
• eliminate the closure of schools and school facilities,
• to remove barriers between different types of schools, between schools of different founders and, last but not least, between employees of different ministries. (Basic information about the study program, online)

It is a suitable combination of theory with practice, the transformation of knowledge into skills, the acquisition and deepening of competence levels. In adult education, theoretical knowledge cannot be separated from practical use. It is necessary to look for a specific path and the activities of the subjects Management in practice prove to be the right connection. This succeeds in eliminating the small level of practical activities in the education of teachers

and managers in education named in international recommendations (McKinsey & Company, 2010).

The school at which the practical part of the training of senior pedagogical staff takes place should meet the key parameters for the so-called departmental school. The term departmental school is used due to the difference from the so-called faculty schools, which is the most appropriate solution in terms of developing managerial competencies needed to perform the position of principal of pre-primary, primary and secondary education (kindergarten, primary and secondary school).

It should be a workplace that serves as a place for managerial practice and its reflection in the preparation of school principals and school facilities, a research site for experimental activities and support for professional development of school principals and last but not least a partner for further education of principals. The choice of departmental school is important. The status should be obtained by a school that meets the defined conditions (quality of the school, quality of the teaching staff, school activities, pupils' results, conditions for providing internships, personnel and material conditions for research).

Before the start of the COVID-19 pandemic, full-time managerial practice took place directly in schools, where individual students applied for an internship at a selected departmental school within the set deadline and completed the internship in groups. The school principal personally showed them the school and passed on their experience from the area on which the internship was focused. In March 2020, due to the global COVID-19 pandemic, schools in the Czech Republic were closed, so another way had to be found to implement management practices that are mandatory for students. In the end, we managed to operatively secure internships in a remote way via selected platforms MS Teams, ZOOM or Google Meet, so that the study plan was fulfilled in the summer semester of the academic year 2019/2020. However, internships in the winter semester 2020/2021 were chosen for the research, which also took place remotely, but unlike the previous semester, their preparation was already planned in advance. 2nd year students evaluated only distance internships, because others had not yet completed them during their studies, while 3rd year students could compare both forms of completed internships during their studies.

2. Methodology

The aim of the survey is to compare the results of research, which took place in the academic year 2018/2019 and 2020/2021, and concerned the reflection of managerial practice by students of the study program School Management at the Faculty of Education, Charles University in various forms due to the emergency in 2020, which closed all schools and full-time practice was not possible.

Research question: What are the fundamental differences in the transfer of the experience of the principals of departmental schools to students in the full-time and distance form of managerial practice.

At the end of the winter semester of the academic year 2018/2019, a research survey was conducted among students of the 1st – 3rd year of the School Management study program (47 + 43 + 39), concerning the completion of full-time managerial internships within the subject Management in Practice. The survey focused on the organizational, content and communication skills of the principals of departmental schools where the internships took place. After completing the mandatory internships, students performed a final self-reflection, which they presented at a joint meeting with the teacher of the subject. (Šafránková & Urbanová, 2019)

At the end of the winter semester of the academic year 2020/2021, a research survey was conducted among students of the 2nd and 3rd year of the School Management study program

(43 + 43), concerning the completion of distance management practices within the subject Management in Practice. The survey was again focused on the organizational, content and communication skills of the principals of departmental schools where the internships took place. After completing the compulsory internships, students performed a final self-reflection, which they presented at a joint meeting with the teacher of the subject.

Both surveys took the form of 30 semi-structured interviews and a questionnaire survey with 15 open-ended questions and 5 questions for identifying respondents.

3. Results and Discussion

The results of the research survey in the academic year 2018/2019 according to Table 1 showed that the practical part of the study program School Management is an important and integral part of it (78 % and 90 %, respectively).

The main reason is that most students work in education and seek a position in the management of the school in the future, so gaining practical experience in practice and their application in their own school is a good basis for school management (39 % and 56 %) . Theoretical knowledge gained in lectures is appropriately applied in practice in the authentic environment of schools. The principals of departmental schools are experienced managers who are willing to share not only positive but also negative experiences and provide samples of various documents (84 % and 87 %, respectively). Students especially appreciated the personal acquaintance with classmates and school principals, the exchange of experiences and the acquisition of new ideas in the field of school management. Although some of them did not work in education at that time, they were able to apply the experience gained in the field of general management in other fields (56 %, and 59 %, respectively). Experience has also shown the well-known fact that school management is not a simple matter, as it combines many areas into one function (legal, personnel, economic, pedagogical process). Students realized the complexity of school management, its insufficient evaluation by the state and appreciation by the public (89 % and 85 %, respectively). A positive finding in the research was that the internship helps students to shape the image of the school they would like to lead, to which they would like to send their children and where they would like to work as teachers (77 % and 51 %, respectively).

Table 1: Students opinions on full-time managerial practice in the academic year 2018/2019

Students opinions of managerial practice	1st. – 2nd year of study	Percentage	3rd year of study	Percentage
1. Awareness of the difficulty of school management, lack of appreciation by the state, public, and little staff and material support that directors receive.	80	**89 %**	33	**85 %**
2. Sharing information and documents. Documents provided by other schools become a guide for students on how to create a similar document and how to approach it in practice.	76	**84 %**	34	**87 %**
3. Get to know each other, exchange experiences, advice and new ideas in school management.	75	**83 %**	35	**90 %**

4. Friendliness, readiness, willingness to share with negative situations and their subsequent solution by school heads.	71	**79 %**	29	**74 %**
5. Overall, practice has been beneficial and an important part of teaching.	70	**78 %**	35	**90 %**
6. Practices help shape the image of the school that students would like to lead, to which they would like to send their children and where they would like to work as educators. In practice, the mentality of education, the mentality of directors, sees the direction in which education is heading.	69	**77 %**	20	**51 %**
7. Possibility to visit all kinds of schools (kindergartens, primary schools, secondary schools, high schools).	69	**77 %**	35	**90 %**
8. Managerial practice will be appreciated not only by people working in education but also outside, as they can gain interesting knowledge from the world of management, which can be applied in other fields as well.	50	**56 %**	23	**59 %**
9. Knowledge is passed on by people who know very well the school and its management.	48	**53%**	25	**64%**
10. Applying knowledge and experience from practice in your own school.	35	**39 %**	22	**56 %**

Source: Šafránková, Urbanová, 2019 (managed)

The results of the research in the academic year 2020/2021 according to Table 2 largely confirmed the results from the academic year 2018/2019 that managerial practices are a benefit and an important part of the study for students (70 % and 93 %, respectively).

The acquired knowledge was passed on by experienced directors (81 % and 88 %, respectively), who were willing to provide samples of various documents (35 % and 47 %, respectively). The main difference in the distance form was the impossibility of personal contact with school principals and classmates, and thus mutual acquaintance, exchange of experiences, advice and new ideas in the field of school management for 2nd year students (93 %). Related to this was the impossibility of a personal visit to the schools themselves to obtain a comprehensive view, which was reflected in the evaluation (81%). At the beginning of their studies, third-year students had the opportunity to visit the school in person and also appreciated it (91 %). The willingness of principals of departmental schools to adapt operatively to the sudden situation by changing the form of managerial practices was highly appreciated by students (88% and 93%, respectively). Many students accepted the implementation of internships in the form of distance as a possible option for the future, which could be beneficial at a time when the school is not accessible by road or distance (35 % and 4 7%, respectively). The final reflection with the teacher was a great benefit, especially for the students of the 3rd

year of the end of the internship of each semester, at which the acquired knowledge was shared by the students and analyzed with the teacher (65 % and 88 %, respectively).

Table 2: Students opinions of online managerial practice in the academic year 2020/2021

Students opinions of online managerial practice	2nd year of study	Percentage	3rd year of study	Percentage
1. Impossibility of personal contact with the school principal and classmates, and thus mutual acquaintance, exchange of experience, advice and new ideas in the field of school management.	40	**93 %**	-	-
2. Willingness to operatively adapt to an unexpected situation (pandemic) by changing the form of managerial practices.	38	**88 %**	29	**93 %**
3. It is important to meet in person in schools that one would not normally look at.	-	-	39	**91 %**
4. Experienced people who know the issues of the school and its management pass on the knowledge in practice.	35	**81 %**	38	**88 %**
5. In practice, there is a mutual personal exchange of experiences, sharing ideas and advice in the field of school management.	-	-	37	**86 %**
6. Inability to look at schools in person, which can affect a comprehensive view of practice.	35	**81 %**	-	-
7. Managerial practices are an important part of the School Management study program, which suitably complements its theoretical part.	30	**70 %**	40	**93 %**
8. A great benefit is the end of the internship of each semester with a final reflection with the teacher, on which the acquired knowledge is shared by students.	28	**65 %**	38	**88 %**
9. The readiness and willingness of the principal to share not only positive experiences with school management, but also negative ones.	21	**49 %**	31	**72 %**
10. The transferred experience and sample documents can be applied in your own school.	15	**35 %**	20	**47 %**
11. The possibility of online managerial practice could be beneficial in the case of schools that are not accessible to students by road or distance.	15	**35 %**	20	**47 %**

Source: Authors´ research

Conclusion

Part of the School Management study program is the practical part, which takes place at departmental schools in the form of managerial internships. Students will personally get acquainted with the school and its principal, who will then share their experience with school management.

The result of the analysis of the situation of professional practice in specific pandemic conditions and comparison of differences in transferring experience to department principals and acquiring skills of students in full-time and distance form of managerial practice is that other forms of managerial practice do not affect the fact that internships are beneficial and important part of the study.

When comparing the results of research conducted in the academic year 2018/2019, when internships took place in full-time form and in the academic year 2020/2021, when they took place in distance from using various platforms, it was found that the form of managerial practice does not affect students an integral and important part of the study and appropriately connect the theoretical basis gained in lectures with the practical experience of principals of departmental schools. Thanks to the willingness of the principals, the internship took place in an extraordinary situation, which was also positively evaluated by the students. The disadvantage of the distance form is the impossibility of personal contact with both the principal and classmates, so it is more difficult to share their experiences with each other.

The results show that other than the full-time form of managerial practice may not be rejected in the future. If the principal is ready for it, it can take place in places that are difficult to reach either by traffic or distance, or at a time that does not allow for personal meetings directly at the school.

To confirm the results, it will be necessary to monitor this situation over a longer period of several years and then formulate final recommendations according to the results.

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Acknowledgment

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Electronic education: options of educational flexibility

Elektronické vzdelávanie: Variantnosť edukačnej flexibility

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Abstract:

The aim of the paper is to characterise the role of e-learning in business education in Slovakia. Data obtained from 180 managers and small business owners via interviewing and questionnaires are analysed in terms of the implementation of electronic education before and after the pandemic and the application of learning management systems in the sample analysed. E-learning covers the delivery of course systems, content management systems, assessment tools, webinar platforms, learning management systems, content learning management systems, learning data management systems for securing the stability and compactness of content and distribution channels.

Key words:

Electronic learning, e-learning, computer-based training, learning space, flexible education, distance education.

Introduction

E-learning is currently seen as a growing global marketplace. It is a diverse technology system that provides a range from full-fledged stand-alone learning platforms to specialized online tools and digital resources. (Hrašková, pp. 69-71.) E-learning companies have realised that in the longer term they need to adapt to a rapidly changing environment, provide the highest quality education today, and prepare for future changes. Nowadays, e-learning is one of the fastest growing factors in the educational environment, which could be documented with basic historical moments. The first major mention of Internet-based education dates back to 1996 (Kouba, 1992), when the first article on Internet-based Training was published.

In 1998, the first major online NYU university was established as part of New York University. This was followed by the establishment of other companies, such as Click2Larn.com, Smartforce, Headlight, and many others. In 2000, an e-learning standard based on XML-Scorm in version 1.0 was introduced. E-learning reached the peak of its popularity in 2000, when investors' interest in e-learning companies culminated. But during the year 2000, a dramatic decline in interest in e-learning companies began. At the end of 2001, also the University of New York closed its virtual gates. E-learning fell into disfavour despite the new solutions it introduced. A great hope was vested, for example, in the Learning Content Management System (LCMS). The technical side of the training was no longer emphasised, and the focus was much more on the content side (Veverlík, 2020).

E-learning has become an evolving form of education due to advances in computer technology. It has created a huge variability of the educational environment; today we can observe an undeniable potential in its application and further improvements. Its potential has to be seen

in the following two basic dimensions: people learn best when the subject matter is up-to-date, relevant to their needs, and in line with the way individuals learn; it is beneficial for globally operating companies.

A third dimension was added to these two basic dimensions in the year 2020: the pandemic dimension caused by the spread of COVID 19, which, despite the high interest in full-time education, pushed it to the background in order to avoid the spread of the disease. For many institutions and businesses, e-learning has remained the only learning option. The wide-spread blended learning, which combines traditional education with online education, has also been replaced by fully online education. (Clark, 2008; Olasile Babatunde Adedoyin & Emrah Soykan, 2020; Appavoo, 2020; Valverde-Berrocoso1, Garrido-Arroyo1, Burgos-Videla & Morales-Cevallos, 2020)

E-learning improves learning and education by expanding and complementing face-to-face education, instead of replacing it. Armstrong mentions the following types of e-learning:

- **individual e-learning** (The learner uses a given technology, but is not linked to their instructors or other learners at that moment.)
- **live e-learning** (An instructor and a learner, who are in different locations, are in contact by means of a given technology.)
- **collaborative e-learning** (Learning takes place through exchanging and sharing information and knowledge among learners via discussion forums, computer builletines, chat, etc.). (Armstrong, 2007)

Electronic education creates a new dimension of education for employees, managers, owners of businesses (who perform the role of course participants) and lectors, instructors, mentors, and coaches, as it helps them in searching for and utilising information in the way that develops their initiative, creativity, and mutual cooperation. (Hung & Chou, 2014).

1. Starting-points and Characteristic Features of Electronic Education

E-learning is a current technological element applied in several forms of education. It represents multimedia and didactic support of the educational process; it uses information and communication technologies to achieve higher quality and efficiency of education. An important part of flexible learning is the design of teaching aids that contribute to the achievement of educational goals. In addition to textbooks, magazines, CD-ROMs, videos, sound recordings, teaching manuals, television and radio broadcasting, transparencies, or slides, the latest information and communication technologies can be applied.

Given the large number and options of available teaching aids, it is necessary to choose the ones that are most likely to improve teaching. The target group in education needs to be taken into account, i.e. the educational level of the students, their skills and abilities to work with certain Technologies, as well as the content of education. E-learning is education using presentations and texts with links, animated sequences, video images, shared workspaces, voice comments, own notes, communication with the lecturer and between participants, tests, electronic models of processes.

We could define e-learning more broadly as a tool for creating, updating, distributing and evaluating education and knowledge management through network technologies and a computer with appropriate software and hardware (iSpring, 2019). Flexibility in education does not only lie in the use of different forms of electronic communication; the entire approach is much broader as it integrates the benefits of electronic communication into traditional ways of teaching. (Palmer, 2011)

E-learning exists in several basic variants depending on the communication technology it uses (Clark & Mayer, 2016). It is basically divided into off-line and on-line e-learning. Off-line e-learning does not require the connection of the student's computer to another computer via a real-time network. Study materials are distributed through storage media such as CD-ROM and DVD-ROM, HDD or LAN and can also be tutorials delivered via the Internet WBT – i.e. education supported by Web Based Training (WBT), and also Audio / Video and Computer Based Training (CBT). This type of education is advantageous in further education, where the student is engaged in independent study and combines this home study with consultations with the lecturer. Off-line e-learning is a set of technological tools – hardware and software, supporting self-access study.

Online e-learning is characteristic of the connectivity of the computers in the network through which the information is transmitted. On-line e-learning exists in two basic forms of communication, namely synchronous and asynchronous (Zlámalová, 2008, p. 130).

The synchronous version of online e-learning requires a constant connection to the network and allows the student to be connected to the lecturer (tutor) and to his / her student colleagues at the given moment. Connection with the lecturer and colleagues is possible in time, not in space. Here, time independence is lost (Elkins & Pinder, 2015), but the great advantage is the ability to communicate over long distances using chat, virtual phone, interactive video, video conferencing service, etc. Synchronous communication takes place in real time, i.e. actors must be present at the same time. Technologically, this communication can be based on voice, text, audio or video transmissions.

The asynchronous version of e-learning is less demanding, it does not require a permanent connection to a computer network. Learners and the instructor communicate in it through standard e-mail, web, Skype consultations, discussion forums – discussion groups (Pomffyová, 2009), and the like. It uses various forms of asynchronous communication and involves various forms of didactic activity, e.g. discussion forum, virtual seminar, computer simulations in a virtual laboratory, group project, e-mail, etc. Asynchronous communication takes place at different times. As a result, responses are delayed, but this disadvantage is offset by the fact that the actors in the discussion can communicate at a time that suits them best.

Another advantage is that students are not under time pressure and can better formulate their ideas. Forms of asynchronous communication includes e-mail, e-mail lists, newsgroups, message boards, discussion forums and other short news programs. Asynchronous communication technology is probably the most popular in corporate e-learning. The discussion forum allows employees and lecturers (or managers) to share ideas, ask questions, and show individual discoveries whenever they want to and from any place that an internet connection is available. The discussion is organized in topic groups, i.e. posts related to a certain topic are displayed together.

The development of information and communication technologies (ICT) has enabled a significant shift in education by ensuring an unrestricted access to information. Another important element is the use of the enormous potential of ICT technologies to support and develop one's own educational process and distribute didactically processed educational content that can be quickly updated, thus increasing the quality of education. E-learning in businesses can be implemented by businesses themselves activity or through suppliers of software to support e-learning, e.g. Atutor, IBT, ILIAS, Learning Space (Lotus IBM), Top Class (WBT Systems), WebCT and others (Pomffyová, 2009, p. 11). There are various suppliers in Slovakia, focusing on supporting education such as Gopas, Kntis, Zebra, Interway, and others. Within the use of multimedia, there is an advantage that they do not depend on the Internet, these educational materials have to consider the target group, educational goals, didactic principles, namely the principle of proportionality, choice of form and visual aids, and others (Pomffyová, 2009).

Despite the reduced interest in e-learning after the year 2000 and the introduction of the LCMS Learning Content Management System, most LCMS systems automatically administer the entire learning process (assessment, results, etc.) and the functions of developing the learning content, importing, exporting, and sharing. E-learning also includes systems for knowledge management and education management (LMS) and systems for content management and provision of electronic courses (LCMS) (Kontis: všetko pre vzdelávanie a e-learning, 2018). The Learning Content Management System (LCMS) was created by combining LMS and CMS (Clark & Mayer, 2016). To be specific, the Content Management System (CMS) is an education content management system. Its function is storing, indexing, browsing and archiving content. In addition, these systems enable the organization and control of access to content. LCMS provides authors, curriculum designers, and subject matter experts with the means to create e-learning content more effectively. The primary business problem that LCMS solves is to create enough content in time to meet the learners' needs.

These two learning management systems not only differ from each other, but also complement each other as well. After their thorough integration, it is possible to exchange information of these two systems, which ultimately leads to richer teaching for the user and a more comprehensive tool for the tutor. The LMS can manage user communities and allow each of them to run the appropriate objects stored and managed by the LCMS. When providing content, the LCMS also stores individual progress bookmarks, records test results, and passes them back to the LMS for reporting purposes. (Greenberg, 2018) The basic essence of LMS is organizing and managing instruction. In particular, the LMS supplied by various manufacturers may differ in terms of their functionality: we can find here everything ranging from simple launchers of electronic courses up to complicated systems of entire learning/teaching process.

In general, LMS may be described as a software product that offers an automatic support to learning/teaching process. The best known and most widespread commercial LMS products include Blackboard. Other LMS commercial products are: Desire2Learn, Pearson's eCollege, Edvance360 (originally Scholar360); Jenzabar e-Racer; etc. The most widespread open system in the world is Moodle (Modular Object-Oriented Dynamic Learning Environment). (Elabnody, 2016). Nag, Majumder, and Goswami (2017) highlight features and components of Moodle platform and explain the use of questions created in the Moodle database Question Bank.

Other open LMS systems include for instance: Sakai Project; Claroline; ATutor; or Canvas LMS.

LMS and LCMS are to some extent independent systems. Their present-day interconnection is the SCORM (Sharable content object reference model) standard. The standard defines the description and behaviour of content learning units so that the LMS is able to cooperate with any SCORM-compliant content and mediate the functions described above. Owing to the SCORM standard (SCORM 1,2 and SCORM 2004), customers can use LMS and LCMS of different manufacturers because these systems work together correctly.

f one manufacturer supplies LMS and LCMS, a higher integration and benefits for the customer can be achieved. As *Hui Cai & Kanhua Yu (2015) point out* SCORM standards are applied in distance education system in numerous countries, and owing to the model's problem-solving features, it is used in the industry. Its application in education is also discussed by Chang, Hsuan-Pu *&* Hung, Jason C. (2018). In the theoretical part of the paper, we focused only on some basic starting points, which created the basis for empirical analysis of the issue that affected them and is part of a highly dynamic development.

2. Methodology of Empirical Research

E-learning education is not only a separate form of education, but is often viewed as a complementary form of education. Despite the various complications and risks posed by e-learning, it can be expected to be an innovative element not only in formal but also in non-formal and informal learning. Moreover, it is also going to significantly influence further professional corporate education.

The object of empirical analysis were employer entities, according to the Statistical Classification of Economic Activities SK NACE Rev. 2 in accordance with Decree 306/2007 Coll. in Section A of Division 01 – Crop and Animal Husbandry, Hunting and Related Services and Section C, Division 10 Food Processing and Division 11 Beverage Production.

As many as 180 respondents were addressed — managers (both line and personnel managers) in selected companies and owners in small businesses. The representation of respondents was proportional according to the individual divisions, i.e. division 01, 10 and 11, sixty respondents each. Within the 60 respondents in each group, there was again a proportional representation from small, medium and large enterprises, i.e. twenty respondents, from each group of companies by size.

Empirical research was conducted by the method of interviews, which represented the first stage, in which we conducted informal interviews with selected respondents to get acquainted with basics of using e-learning in education. In the second stage, we designed the questionnaire and implemented a questionnaire survey, which was focused on 180 respondents, whose opinions were recorded in our evaluation. Based on the information, we formulated not only overviews but also proposals for further use and possibilities of developing e-learning education in corporate education. Two types of methods were used for statistical processing of the data collected: manual processing (the bar-code method) and automated processing (collected data) were analysed in MS Excel (Chajdiak, 2007).

Respondent profiles and their opinions obtained in empirical research are presented in tables.

3. Results of Empirical Research

In our empirical research, we focused on two basic variants of e-learning education in terms of needs and possibilities of its application in further corporate vocational education. Education and training must focus on who is to learn, and learning outcomes must be realistically achievable and measurable. All this is made possible by e-learning education, where the risk of inefficiency in education can be high, for certain types of students. If a curriculum is used by someone who is an auditory and kinesthetic type and needs to first know the broad picture of the issue from a vantage point, they may have problems with the amount of detailed information. The advantage is that more people can learn in a shorter time and at lower cost and they are independent of space and in many cases also of time.

Table 1: Implementation of training via various information and communication technologies in professional education

Application of information and communica-tion technologies	Section A						In the year 2020					
	Section A Division 01		Section C				Section A Division 01		Section C			
			Division 10		Division 11				Division 10		Division 11	
	no.	%	no.	%	no.	%	no.	%	no.	%	no.	%
Computer-Based Training (CBT)	48	80	36	60	37	62	38	63	28	47	31	52
Web-based Training (WBT)	12	20	19	32	20	33	22	37	27	45	26	43
Systems for management and administration of learning content and providing electronic courses	-		5	8	3	5	-	-	5	8	3	5

Source: own processing based on results of empirical research
no.: Number of respondents.

In the analysed divisions, computer-assisted education prevailed, which was supplemented by full-time education. Educational materials are presented by computer, primarily from CDs or DVDs; there is no requirement for the computer to be connected to the Internet. Therefore, no links to external sources appeared in the educational materials. The materials contain the following supported items: Computer Tests, Simulations, Animations, Video, Audio, Images, and Texts. In 2020, if they want to provide employee training, a self-access study is a prevalent form of employee training.

Full-time learning activities have shifted to web-based learning. Educational materials are posted primarily on the Website. The Internet and the Web bring increased interactivity, hyperlinks, and electronic communication capabilities to Web-based training. The content includes teamwork, video conferencing, chat discussion forums, online tests, e-mail, and hyperlinks.

Systems for management and administration of content and provision of e-courses are applied to a minimum extent.

Technology Based Training (TBT) is a broader concept than CBT and WBT. It stands for a wide range of electronic education, regardless its way of delivery, either CD, DVD, Web or LMS, LCMS and covers an educational environment using intelligent learning systems. Lavrakas (2008) lists five benefits of technology-based training for survey research: " (a) reduced learning time; (b) reduced or eliminated travel time and expense; (c) improved consistency by capturing and replicating best practices and expert knowledge; (d) increased availability of training (with just-in-time access on personal computers in any location); (e) enhanced productivity by decreasing on-the-job error." (Lavrakas, 2008). TBT – Technology Based Training) is used only to a minimal extent in companies that participated in the research.

In training, video conferencing tools which enable communication were used to a large extent, mainly ZOOM, Google Meet, Canvas Network, to a lesser extent also Microsoft Teams. Both asynchronous and synchronous versions of online education are applied. 73% of all respondents commented on the use of an asynchronous version of online education.

Learning management systems (LMS) applied in education are delivered by various businesses.

Table 2: Application of learning management systems (LMS) in C-section of Statistical classification of economic activities SK NACE Rev. 2

Learning Management System (LMS)	Overview of the most frequently used LMS systems	Section C	
		Division 10 no. of enterprises	Division 11 no. of enterprises
Commercial LMS	Blackboard	-	1
Open LMS	Moodle	2	-
	ATutor	2	1
	Docebo	-	1
	Canvas LMS	1	-

Source: own processing based on results of empirical research

Businesses that use learning management systems usually prefer open systems, which are distributed for free. Electronic education stands for a new philosophy in education, in which the central role is played by the course participant. The instructor is thus moved to the background and their facilitator role is emphasised. (Hung & Chou, 2014; Martin, 2020). This form of education enables to satisfy study needs of heterogenuous target groups within lifelong education under conditions of various time and space limitations. It is becoming a significant innovative element in further professional education.

Conclusion

E-learning is a broad concept, which covers course delivery systems, content management systems, assessment tools, webinar platforms, learning management systems, content learning management systems, learning data management systems, and others. E-learning education, like any other education, has to meet the set educational goals. It is best if these goals are measurable, and the knowledge and skills improvement may be assessed. E-learning platforms also need to be evaluated in this way and need well-defined frameworks for measuring learning outcomes, including data collection processes, specific and meaningful criteria, and appropriate data analysis tools. Measurement of improvements in terms of learning outcomes should be targeted at specific measures, such as adjustments to the pace of learning or adjustments to the platform itself.

Participants who are professionals are usually busy people. The eLearning platform, which does not support high engagement, is doomed to failure, especially for professionals. Studies show that about 22% of students who decided to obtain a certificate actually completed the necessary courses. Massive open online courses (MOOCs) have recorded an overall completion rate of merely 7%. E-learning education may lead to inconsistent and non-systemic education, which reduces learning outcomes. It is necessary to look for ways of involvement and high participation of students in education.

Mobile access, bonus and penalty systems and social media interactivity are all potential tools for increasing the engagement of eLearning platforms. A focus on mobile devices is currently required. Mobile devices have already overtaken the desktop (Terdiman, 2015). Google claims that mobile search has outperformed desktop search when it comes to Internet traffic, with many people using their mobile devices (smartphones and tablets) in preference to mobile computers for almost every task. The use of mobile platforms enables greater engagement and learning outcomes.

An important stage of education is the preparation of the learning content. The term Learning Content Management System (LCMS) can be used to describe any tool or system used to create or compile the learning content. The LCMS system should address: team process of content creation; managing and reusing content sources; decomposition and composition of content into teaching units of any extent; supply of individually customizable learning units to end users; detailed monitoring of users' activities over learning units; and supporting the integration of e-learning learning strategies.

However, we have to state that despite the currently relatively massive deployment and ever-expanding volume of e-learning education in the world, since the creation of the first e-learning content and its distribution, e-learning still does not have specific industry standards and copyright control options that would ensure the stability and compactness of the distributed content and electronic distribution channels.

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Reading strategies as a factor of text comprehension in distance learning

Čtenářské strategie jako faktor porozumění textu v distanční výuce

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Abstract:

The need to develop the quality of multimedia reading comprehension also in distance learning is currently increasing. It is a problem of understanding functional literacy expressions, namely in reading, visual and digital literacy. Student teachers as adults accelerate their reading growth, the quality of reading strategies of educated individuals across generations, e.g. by using a diverse range of methods when working with non-artistic texts. The aim of the study is to identify factors influencing the understanding of reading strategies using the interview method.

Key words:

Reading literacy, reading strategies, comprehension, non-artistic text, multimedia reading, distance learning.

Introduction

Distance learning is a specific multimedia form of a controlled study. The teacher does not have to teach individuals across age (even in adulthood) only online but can adapt the teaching to the educated individuals or groups' age and characteristics. Effective reading activities with various teaching resources, such as non-artistic texts, can be implemented online in teaching and combined with off-line teaching.

Moore (1997) stated that he had recorded the first attempt to establish a theory of distance education already in 1972, which began later to be called the theory of transactional distance. It seems that even after 30 years of distance education, theorists were still not able to convincingly define its theoretical foundations. It is not too surprising that also the field of ICT applications in education, which can be seen as much wider than the field of distance education, faces similar problems.

Several studies have been created in the last twenty year (Moore & Anderson (eds.), 2003; Juszczyk, 2003; Bednarek & Lubina, 2008; Barczak et al., 2006; Górnikiewicz, 2004, Zlámalová, 2008), suggesting that psychological knowledge must be integrated into the theoretical concept of distance education, especially cognitive and motivational processes, the fundamental theses of current theories of education (constructivism and connectivism) and the concept of the participant in education as an active and engaged subject (learner-centred approach).

Distance learning has been implemented in the form fully corresponding to its name in the last decade due to the development of a digital learning environment in the form of MOOC (Massive Open Online Courses), provided by many universities and other providers. Friedl

and Staubitz (2018) find that MOOCs have started to be implemented not only within higher education systems but also in the corporate context. Overcoming the language barrier is the main advantage of MOOCs – the majority of MOOCs (75%) are taught in English (Uchidiuno et al., 2016). Despite the undeniable advantages of distance adult education, the repeatedly found low rate of successful completion together with knowledge of socio-cognitive theories (Paulo Freire, Erich Jantsch) and humanistic theories of education (Carl Rogers, Kurt Lewin) (Bertrand, 2003) is increasingly mirrored in the implementation of blended-leaning, which functionally links the advantages of distance education (now commonly called online education) and full-time education (Eger, 2020).

Distance learning in the Czech Republic

The amendment to the Education Act (Ministry of Education, 2020a) introduced distance learning in the Czech Republic as a method of compulsory school attendance. The Czech pedagogical public understands distance teaching as an opportunity to improve teaching quality not only throughout the coronavirus pandemic and in other crises. Today's concept of teaching at universities understands distance learning as a permanent part of full-time teaching.

The outputs of the conference entitled "Distance teaching as an opportunity" pointed to the fact that "although teaching is mediated by technology, people in the centre – teacher and student – remain" (Ministry of Education, 2020b). The current rapid change from educational reality to distance learning has also brought many new aspects to working with teaching resources and has initiated a reflection on factors influencing the understanding of reading strategies from future teachers' perspective.

Reading literacy as a research matter

Following the findings of international PISA surveys (2018) (Programme for International Student Assessment), it is imperative to discuss the reading literacy level as a phenomenon which needs to be developed in interdisciplinary and broader educational contexts. Czech School Inspectorate pointed out the current outputs international PISA survey (2018) focusing on reading literacy and reading strategies of a group of fifteen-year-old students in its National report (2019). Reflection of the Czech education system (according to PISA, 2018) identified the strengths and weaknesses of the observed literacy problem.

Our study aims to support teachers' work with non-artistic texts in distance learning, focusing on factors influencing students' reading literacy levels. Alarming information supporting the interest in developing functional and thus reading literacy across the age population in an international context is that "the share of Czech students in the lowest literacy levels in the reading literacy tests has been around 20% for a long time and has been increasing slightly since the start of the PISA project. This fifth of students represents a group of people who may have problems with further employment in society." (Blažek, Janotová, Potužníková & Basl, 2019, p. 7)

International PISA survey (2018) outputs further pointed out the insufficient work with various teaching resources and the appropriateness to work with art literature and a diverse range of non-artistic, professional, popular science and texts from everyday life in educational reality. Teachers should use activities supporting work with text in broader contexts, various methods, and teaching forms (Frost, 2011). Gavora (2003) suggests that reading literacy, part of functional literacy, can be obtained by pupils throughout primary education. Sýkorová (2014) recognises functional literacy not only as of the ability to read, write and understand a text but also as "the ability to process information from a text and use it to solve tasks or various life situations" (Sýkorová, 2014, p. 166).

The complex quality of reading and literacy is influenced by a whole range of external and internal factors (Mangen, 2013). Najvarová (2007), Parks (2014), Sýkorová (2014), Stuart & Stainthorp (2015), Vicherková (2020), Sandberg & Norling (2020), Trávníček (2020) researched the factors influencing the level of written information comprehension. "The objective factors of literacy include those that emerge in an actor's form from the social, cultural and economic context, i.e. from the environment of education in the family, school, but also from the social context" (Vicherková, 2017, p. 51).

At the Faculty of Education of the University of Ostrava (November 2020), we carried out qualitatively oriented research using interviews with student teachers to identify factors influencing the understanding of reading strategies when working with non-artistic text in distance learning (Gubrium, 2012).

Qualitatively oriented research methodology

The pilot research (Vicherková, Šenkeříková & Lichá, 2020) carried out by the method of semi-structured interview with 11 selected student teachers at the Faculty of Education, University of Ostrava was the starting point of the qualitative research of factors focusing on the problem of understanding reading strategies.

The aim of the pilot research (2020) was to find out which types of reading strategies are used by student teachers when learning from a non-artistic text, how does the image in the non-artistic text influence the learning process of the respondents, what is the popularity of teaching resources with different types of images (pictograms, photographs), what importance do student teachers attribute to an image in the text as a factor influencing text comprehension.

Qualitative research focusing on factors influencing the understanding of reading strategies of student teachers

Two hundred fifty teacher students from the University of Ostrava were invited to participate in the research of factors related to the understanding of teacher students' reading strategies when working with text in distance teaching in the winter semester of 2020. A research sample of 25 respondents (students with various disciplines) was compiled by random selection (drawing lots).

We created a research tool (interview) that consisted of a set of 24 open-ended questions, classified into four categories labelled A: Image in a non-artistic text, B: Reading strategies and a non-artistic text, C: Digital strategies, multimedia reading, D: Learning strategies in distance learning. The aim of the research interviews was to find out:
- how students of teaching perceive the image in a non-artistic text in distance learning,
- how students perceive the image as a communicative expression in a non-artistic text,
- what types of images and text influence the learning process in distance learning,
- what (e)teaching methods influence the development of reading strategies, digital strategies, students' learning strategies,
- what organisational forms of distance learning influence the development of reading strategies, digital strategies, learning strategies of students,
- what factors influence reading comprehension in distance learning.

Selected results of a research survey acquired through interviews with student teachers and their interpretation

The research found out that most student teachers (72.7 %) use a non-artistic text (a learning resource in distance learning) which includes a picture on the title page, and 81.8 % of students

consider a picture in a non-artistic electronic text to be unnecessary. Image appendix in the non-artistic text helps most students (90.9 %) to understand written information to a greater depth. Graphic visualisations in an electronic learning environment, help 81.8 % of students connect newly acquired knowledge with everyday reality. The accompanying illustrations (representations) in a non-artistic text (e.g. graphs, tables, diagrams) facilitate understanding of reading strategies to the same share of 81.8 % of students.

The answers to an open question, e.g. **why students like a non-artistic text with an image on the title page (A2)**, were processed by open coding according to a methodological approach (Šeďová & Švaříček, 2007, p. 211) and classified into four categories. We introduce two of them in greater detail.

Cover image acts as:

1. the first idea of the content and form of written information
2. key factor in deciding to buy (borrow) a book
3. decisive factor for reading the text:
   • cover image leads to a reading out of curiosity
   • cover image encourages reading for cognition
4. factor for predicting and understanding written information:
   • cover image leads to the search for suitable keywords concerning the text
   • cover image helps to decide not to read the text superficially
   • cover image is a reflection on thinking about the written information

The answers to the open question, **why illustrations in non-artistic electronic text facilitate student teachers´ learning (A3)**, were processed by open coding and classified into four categories. We present two of them in detail.

We understand illustration as different from image since it is not focused on, e.g. data tabulations and their graphic representations or mind maps, but on the artistic representation of a selected phenomenon. Illustrations in non-artistic text act as:

1. exposition methods
2. factor supporting memorisation of information included in the text
3. transfer leading to the understanding of a non-artistic text in an electronic environment:
   • illustration is a reading strategy since it converts written information into pictorial form
   • illustration leads to a comprehension of written information as a guide
   • illustration resembles a ship in the ocean of information
   • illustration coverts written information to life
4. Barrier in understanding reading strategies:
   • illustration may sometimes be a communicative noise making an evaluation
   • of written information more difficult

The answers to the open question, **which types of illustrations (images) and their functions help student teachers understand a non-artistic text in the electronic environment (A1)**, were processed by open coding and classified into four categories. Three of them presented in greater detail:

Illustration with function:

• organising: shows key written information in a graphical representation
• creative: provokes one's own aesthetic or scientific work

- caricatural: illustrations of portraits of personalities lead to thinking about the characteristics of individuals based on caricature perceptions from the observation of a non-verbal image
- interpretational

The answers to the open question, **which types of reading strategies are used by student teachers when reading non-artistic text in distance learning (B2),** were processed by open coding and classified into ten categories. We include two of them in detail.

1. Reading strategy: formulation of keywords when reading non-artistic text in distance learning:
   - creating keywords for the read non-artistic text helps to understand the meaning of the text
   - formulation of key terms and their arrangement into the syllabus based on information from a non-artistic text
2. Reading strategy: repeated reading of a problem paragraph in a non-artistic text:
   - quiet/loud, individual/group
   - with a change of place (reading position)
   - selected parts of a non-artistic text as an echo
3. Reading strategy: underlining and marking unknown words when reading a non-artistic text

Other reading strategies when reading a text (4th – 10th category) include: 4. searching for fundamental relationships between individual sub-topics, 5. asking questions while reading and after reading the text, 6. searching for additional new information from various media sources based on the text, 7. graphic notation (drawing of characters) of information based on the text, 8. creation of worksheets focusing on selected problems after reading the text, 9. creation of a glossary of keywords to selected problems based on the text, 10. transfer of interpretation of the text to a stylistic unit of reflection focus.

The answers to the question, **what types of digital strategies (as part of transferable skills) students use when working with non-artistic text in distance learning (C1)**, were processed by open coding and classified into three categories:

1. Digital strategies for acquiring and evaluating digitally-focused knowledge:
   - creation of a database of digitally-focused knowledge in the problem of "Industry 4.0",
   - work with a theoretical background database for digital transformation projects and initiatives in education, the theory of digital activities, critical reading and innovation
2. Digital strategies for acquiring and evaluating digitally-focused skills:
   - creation of a database of digitally-focused new skills about the problem of "digital transformation", implementation of digital activities, multimedia reading, skills required to analyse large volumes of data, development of so-called transferable skills"
3. Digital strategies for acquiring and evaluating digitally-focused competencies:
   - creation of a database of digital competencies in connection with the development of "artificial intelligence", work with a diverse range of online interactions and communication within online education (Alexander, 2012).

Discussion and conclusions

As part of the teaching preceding the research, a group of students forming a sample group completed a course in reading and communicative strategies as part of their studies at the Faculty of Education, University of Ostrava.

The research interviews with the students showed that adult students consider the following learning activities and assumptions to be factors influencing their comprehension of the text in distance learning:

- Cooperation between teachers and students and their logical pedagogical communication, students' effective learning strategies and teachers' teaching strategies,
- their knowledge and experience of the digital educational environment,
- their skill and reading experience in working with electronic text,
- own knowledge of various reading strategies and skills to use them (e.g. in working with keywords, technical terminology, questions, reading with anticipation and reading-problem assignments to the text, reading transcription, reading creativity, discussions about reading, critical thinking, etc.),
- implemented digital and project activities associated with effective reading and understanding of the information from the text,
- continuous development of individual components of their functional literacy (e.g. reading, digital, visual, mathematical, financial, scientific, etc.) in educational and everyday activities.

Adult students pointed out that comprehension of a text in distance learning is influenced by selecting the appropriate reading strategy, or a combination of several reading strategies, diversity and quantity of work with different types of texts, including e-resources or other media. Popular student reading activities in teaching include inspiring work using various traditional and innovative methods and forms that develop especially their reading, digital and visual literacy.

Students consider a functional image in the text, enriching the written information in terms of content and form, to be a factor which facilitates their understanding of the text.

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Selected methods of systemic approach for adult education

Vybrané metody systemického přístupu pro vzdělávání dospělých

David Ullrich, Eva Ambrozová, Jiří Koleňák, Vratislav Pokorný

Abstract:

The text focuses on selected aspects of the 21st-century changes and challenges. In connection with the effects of solving the „covid-19" issue, emphasising forms of distance education using digitization, the authors present ideas and experiences to apply selected methods of systemic approach for adult education.

Key words:

A systemic approach, systemic andragogy, reflection, intention, custom-made request/order, information and knowledge literacy.

Introduction

Qualitative changes in the modern environment reflect in level quality requirement changes in people's potentials and human systems. Development and qualitative change of characteristics and dynamics of modern environment processes require people´s mental mobility, especially concerning information literacy and knowledge „self-sufficiency", relational mobility, and proactive adaptability of people and human systems, effective stay in this environment and designing its development (Bennis, 2007; Anderson & Sun, 2017). Mental mobility primarily concerns the information and cognitive domains, and ultimately our minds, thoughts, and ways of knowing, above all. The modern environment increasingly uses various techniques[2] and technologies. Moreover, it produces them and gets significantly influenced by them, as well as our life. (Hadot, 2010, p. 100, 108; Y Gasset, 2010, p. 29-39).

It somehow „bases" on the technological trend, and this trend has gradually bec ome dominant and decisive. This trend also appears to be limiting, restrictive and even risky in some aspects. For example, because these technologies create, process and transmit specific data, and from them create information and knowledge of various kinds, which undoubtedly contribute to cognition, decision-making and action, but on the other hand, it does not create knowledge.

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[2] Note on technique and mechanics, origin, and terms meaning taken from the Greek. The Greek term for deception is: „méchané", and the mechanics represented the way to deceive nature, to evoke a movement seemingly against nature, to make it do what it does not want to, with the help of human-made tools, „mechanisms". (méchanai): bascules, windlasses, hoists, wedges, screws and gears, which are then used, for example, for the construction of war machines or automatic machines."(Hadot, 2010, p. 100) P. Hadot discusses mechanics as one of the three forms of „violence" against nature, beside experiment, experimentation and magic. Mechanics falls into the category of „art" („techné)," ... which means human „technology" as opposed to naturally occurring things."(Hadot, 2010, p. 108). Nature, naturally occurring „things" form the second conceptual category, or rather the opposite of the continuum of man's relationship to the environment in which he resides. On the one hand, there is an attitude where respect, attention and conscious „adaptation" prevail, on the other hand, there is a tendency to manipulate and control the environment.

A significant aspect is also the data amount and information they generate, as well as the amount of time and attention we are forced to devote to them, furthemore, their usefulness, meaning and the effect of „reality reduction" and its natural „ complexity „, formed by their" representation".

This „virtual reality" created by technique and technology relates to the reality and the real social reality that we create with our concrete life and relationships, like a map to the territory (Bateson, 2006, p.35; 2018, p. 445). However, its dominant share in personal, social or societal reality is growing, as is the tendency to confuse these images and our „knowledge" about them, with knowledge, decision-making and conscious action at the level of life and being of a particular human individual. We consider the ability to distinguish these aspects importantly, and we call it „information literacy". It is not just about the data selection and their transformation into information, or the conversion of information into knowledge (which is addressed, for example, by informatics or knowledge management). In short, it represented the ability to think critically and create practical knowledge (knowledge and understanding) in conditions and environmental circumstances for sound decision-making and informed behaviour. For information sciences, the following distinction applies between data, information and knowledge.

Data are not only considered as numerical data such as tensors, or rather „generalization" of specific vectors, quantities characterized by direction and size, obtained in the natural sciences by some form of measurement but also various facts (pictures, sounds), to which interpretation and meaning (data management) are also needed, it manifest itself f.e. in problematics of individual memory (Nesiba, 2018). Information is then understood as the result of analyzes, filtering, formatting and summarising data (so-called information management), for which „actions" and applications are also needed. In terms of cognition and knowledge, according to Bateson, the information is: „some differences that manifest themselves as a difference in a later event" (Bateson, 2018, pp. 446-461; Liessman, 2012, pp. 22-25), and in this context then there is „news" information about the differences.

Knowledge is ideas, rules, principles, procedures, but also, for example, instincts that lead to both decisions and actions (behavior, actions). In terms of cognition and knowledge, according to Bateson, the information is: *„some differences that manifest themselves as a* difference *in a later event"* (Bateson, 2018, pp. 446-461; Liessman, 2012, pp. 22-25), and in this context then there is „news" information about the differences. Knowledge is ideas, rules, principles, procedures, and instincts that lead to decisions and actions (behaviour, actions). In knowledge management, knowledge is information that has been organized and analyzed to become comprehensible and usable for problem-solving or decision making. Knowledge arises in a particular person´s mind by incorporating a large amount of information into context and its communication, sharing or even „transfer" to another person is accompanied by many difficulties.

Ways and methods of knowledge creation, transfer, communication and sharing, and transformation into knowledge, skills and competences are among the dominant themes of human education systems and processes, as well as the sciences that address them (Hendarman & Cantner, 2018). As our environment changes, existing, proven, new approaches and methods are created and developed, which enable effective adaptation, preparation and education of adults to cope with the knowledge and skill requirements on social and professional life in a modern environment. One of the evolving directions is a systemic approach, representing an open system connecting broad range knowledge of applied scientific disciplines, natural, exact sciences, social sciences, and human sciences, concerning knowledge and development of natural potentials of people and human systems.

1) Systemic Approach – Systemic Andragogy

The term systemic interprets in various ways, and its essence is a derivative or neologism trying to capture both the systemic concept in its relatively „static" form, but also the dynamics of the development process of the „whole" and the coexistence and correlation of the individual, human system and the environment together with potential synergetic aspects. The application of this pragmatic approach is increasingly found in the domain of aiding professions, starting with psychotherapy[3] and family therapy, as well as in areas focused on cultivation and development of so-called human resources, such as counselling and consulting, coaching, mentoring, and more, which participate in the optimization, cultivation, transformation, change and development ability qualities and natural potentials of people and human systems, concerning the leadership either (systemic leadership) as well as management (Hogan & Kaiser, 2005; Beenen, 2016; Carbone et al., 2017).

The philosophical basis of the systemic approach is the concept of radical constructivism, which does not seek to describe the world as it is objectively, but which asks how people, we see it, how we describe it and how we participate in its creation, as well as analytical, post-analytical philosophy, phenomenology and philosophy of mind. (Valenta, 2003; Peregrin, 1998, 1999; Cassirer, 1996; Wittgenstein, 2007, 2019; Polák, 2013; Marvan & Polák, 2015).

It can be said that it represents a general scientific attitude or way of thinking rather than a consistent, usually self-contained theory, because it not only continually evolves, but also accepts and applies knowledge of various modern scientific concepts (which necessarily also evolve), such as system approach which, in addition to methods of mathematics and logic, currently belongs to the essential tools of scientific research, as well as synergetics, information science and communication theory (Cejpek, 2005; Watzlawick, 1998; Watzlawick, Baveles & Jackson, 1999). as well as cybernetics and specifically „second" order[4] cybernetics, the concept of autopoiesis (Bateson, 2006, 2018; Maturana & Varela, 2016), theory of self-relation, self-organization and dynamic systems, chaos theory[5] and more. The dominant role, especially in the application level, also plays the language and thinking in language. Therefore the vital source of thought concepts are not only knowledge of analytical philosophy and philosophy of language, but also cognitive linguistics and various therapeutic trends or methods

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[3] According to K. Ludewig: *„The adjective ´systemic´ refers to a general thought approach, namely a constructivist understanding of systems theory.", as well as: ´"Concepts such as" cybernetics, ´ synergetics´,´self-organization, ´relationship´ and ´radical constructivism´ lie near the adjective ´systemic´. All these concepts are one-theme variations and differ only in the vocabulary of the original disciplines."(1995, p. 41).*

[4] The term cybernetics is derived from the Greek κυβερνητικό (*kybernētikós)*, in a sense related to the rudder, steering, and figuratively, driving – κυβερνάω (*kybernáō)*, meaning „steering, driving". It is used as the term for a scientific field researching the general principles of management and information transmission in machines, living organisms and communities. The application potential of theoretical cybernetics is used in areas dealing with regulation and technical management, and the functioning of economics and other aspects of existence and development of society and human systems, i.e., in areas dealing with system properties and behaviour, and especially creation processes, maintaining and developing relationships can be observed as the creation, acquisition, preservation, processing and interpretation of data, information and knowledge. From this point of view, cybernetics includes both systems theory and computer science. Second-order cybernetics is, by its nature, cybernetics of cybernetics, or cybernetics for cybernetics, for more details see e.g. von Schlippe & Schweitzer (2001, p. 38-39). The term „second-order cybernetics" was first used by G. Pask for an approach that examines the structure, organization, and construction of cybernetic systems, recognizing that the researcher-observer is part of the system and therefore never really sees how the system works „externally" because he is unable to „separate" and is a part of the system. In other words, when a scientist or researcher, psychologist (therapist, coach), manager, team leader, and other observe any system, influence it, and at the same time is influenced by it. For more details see, e.g. Heylighen & Joslyn (2001), available (Jan 1, 2021) at: http://pespmc1.vub.ac.be/Papers/Cybernetics-EPST.pdf

[5] For more details, see, e.g., Prigogine & Stegnersová (2001), Gleick (1996).

working with language [6]. An aspect that forms a common platform for applying various disciplines, concepts, and theories is pragmatics.

The pragmatics of the systemic approach and its methods emphasise connecting theory with practice, the meaningfulness and effectiveness of cooperation, and focusing on solving problems and task situations concerning the system development and dynamics (man – situation – environment/context) nformed decision-making and action. Thus, the application potential can be perceived in all other areas devoted to the cultivation of natural human potentials, human systems for realistic decision-making and effective action, which are both areas of „helping" and the domain of people´s education and development and their potentials. Pedagogy in general, and andragogy in particular, are inherent (Laszlo et al, 2017). Pragmatics in this context must be distinguished from positivist empiricism rooted in „historicism" (Popper, 2008, p. 46, Patočka, 2007, Spengler, 2017). As a philosophical direction, pragmatism rejects the idea that the function of thoughts and ideas is to describe, represent or otherwise „reflect" reality and bases on the assumption that ideas are more a means or tool of meaningful prediction, reasonable, realistic action and problem and task solving. In this sense, pragmatism focuses more on actions and behaviour and their usefulness in practice. The pragmatic approach demands objectivity, impartiality, a focus on the effectiveness and usefulness of problem-solving, and a social context on the benefit both for a particular individual and the community as a whole.

At the University of Defense in Brno and at NEWTON College a.s, we cultivate and develop andragogy in the context of systemics (systemic andragogy). We apply mainly two methods in adult education programmes, especially in humanities and social sciences from the systemic approach methods. These are a method of reflection and a method of intent, precisely the technique of the order. In general, the method of reflection application and work with intention, order and supply, allows to „work" consciously with partially or entirely formed unconscious phenomenal content[7], which may co-participate in cognition, decision-making and action (human behaviour). It contributes to streamlining both the relationship and the process of cooperation between teacher and student/students, and the effectiveness of individual study, a particular student education. The criterion for selecting and practising these methods is their applicability at two levels:

- Level of personal work, study and practice, i.e., the ways of student´s self-practice and gradual development of his toolset for mind cultivating, the process of thinking and cognition, skills and competencies for personal and professional life (Laker & Powell, 2011; Culpin, & Scott, 2012).
- Level of study cooperation, i.e., the environment for meeting with the master (teacher) and the pupil (student) within the pupil's intention and standard theme.

Systems andragogy applies, researches and develops the principles and methods of the systems approach. It allows students to specify and objectify both aspects of their motivation to study and specify learning needs (order) regarding the expected outcomes and effects of the learning process in their personal and professional environment (there are experts for these environments). The result of this process is the pragmatics of an effective personal (individu-

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[6] For more details, see, e.g., Cassirer (1996), Watzlawick, Bavelesová & Jackson (1999), De Shazer & Dolan (2011), Lakoff (2014), Lakoff & Johnson (2006), conversational and cooperative hypnotherapy (Erickson & Rossi, 2009), Slouková (available at : http://filosofia.cz/index.html

[7] A. Damasio also calls unconscious phenomenal contents idiosyncratic (from the Greek *idios* – own, strange, distinctive, unusual and *sinkrasys* – a mixture of fluids, meaning unusual, unsystematic, peculiar, unique or individual) images. (Marvan & Polák, 2015, p. 77-78, 81-82).

al) study plan, and the updating of the contract for educational institutions and the educational system, which represents the context of education.

The structure and content of educational programs and ways and methods of mediating study cooperation between a teacher (tutor – institution, teacher) and a learning individual can be effectively developed and modified in the process of pedagogical practice according to specific educational needs.

The expert education system strengthens its qualitative parameters as a learning organization. It can then respond flexibly and proactively to educational needs through teacher-pupil relationships and communication channels, models and standards (program, lecture, exercise, seminar, etc.). It can also more effectively adapt its resources to the specific educational needs of the student or specific professional group and update the structure, content and methods of „knowledge disciplines" with the segments not included in educational programs and algorithms but useful for the practice of specific professional or current social practices, especially in connection with changes in professional areas (creation of „new", specific or professionally cumulated – interdisciplinary professions and jobs).

Suppose we understand educational institutions as an expert system. In that case, its expertise is also the analysis of the usefulness, validity and reliability of knowledge and methods of specific disciplines and their application potential for current and future professional and social practice, i.e. traditional information, experience and knowledge gathering, and their mediation, communication – meaningful, useful and practical, i.e. usable and currently applicable in particular. An expert on their meaningfulness and importance, usefulness and effectiveness, especially in adult education, is the learning student and his specific professional practice, the „place" of employment.

Methods of reflection and order allow both members of the education system to respect and cultivate this expertise. From the systemic andragogy point of view, this is one source of excellence and quality of education as an important social process. The „management" of the quality of this process is thus not centralized, one-sided, or based on some specific feedback, but two-sided and „direct", as it takes place in „points of contact", in a living relationship between teacher and learner.

They help to cultivate and develop. The expert system of an educational institution becomes open as it continuously updates feedback on those educational needs that are specific (individually modified) and general (i.e., with a higher degree of general validity in professional systems and organizations), created by qualitative changes environment, and responds to them more flexibly, and can proactively program their „future" form. A significant effect is also the fact that this „feedback" takes place in the „place" of contact and relationship between the learner and the teacher, where it is really „mutually" useful and meaningful.

2) Reflection Method

The method of reflection is an effective and in a way already necessary tool for cultivating human consciousness and knowledge, involved in ways of thinking and cognition, and ultimately the mouth or its pragmatic effect is the cognition of cognition itself, i.e. cognition (Maturana & Varela, 2016, p. 220-221). It can be understood as a cognitive activity, the effect of which is to become aware of mental processes, their phenomena and also intervening variables, either in the form of explicit indicators, criteria and categories, or implicit, participating in the knowledge, decision-making and actions of the individual, for example in the form of unconscious. Preconceptions. In his dualistic concept, Descartes assumes that: „... *the human mind can reflect on its thoughts when it thinks,"* which means that it is aware of its thoughts (Marvan &, Polák, 2015, p. 15-16). Leibniz places reflection on the topic of apperception

(conscious perception), which he understands as a reflected knowledge of what is perceived. Reflection as a method in the context of a systemic approach cannot be confused with self-reflection, introspection or other „procedures" usually placed mainly in the domain of meditation or self-cognition techniques. When applying the method of reflection, we start from C. G. Jung's concept[8], which emphasizes it primarily as a function or ability of our mind to focus on itself (to be an object to itself). From the point of view of cognition, we understand it as an act and a process of awareness, and we consider it as a method for: „conscious stabilization and focusing attention on the process and results of an individual´s thinking, taking a position of inner distance" (Ambrozová et al. 2016).

The application of the reflection method allows creating insight into the course and results of thinking, ways of cognition (including epistemological habits[9], and stereotypes), analyse, concretise and objectify them. It takes an „inner" attitude and create a „distance", mentally „separate" from relationships and „exit" from processes emerging from a situational (systemic) context and a reactive (linear) level, and consciously enter a proactive level. The change of state caused by entry or emergence on a proactive level enables the conscious „processing" of what we experience, (experience, past) and see and contribute to our distinction's accuracy and subtlety and supports our potential for practical environmental impact. Development of the situation, relationships and processes.

Another effect of proactivity is modifying thinking and cognition, shaping experience into knowledge through our decisions and actions. Conscious processing of experience connected with applying the reflection method allows us to cultivate the quality of analytical and intuitive thinking for cognition and decision-making (for more see Kahneman, 2012, p. 125, 131, 224). Thus, it increases our „mental" mobility on the cognitive continuum (see Kostroň, 1997, Hammond, 2000), and the selectivity of cognitive types (Chatterjee, 2014) in solving various problems and problem situations[10].

The practice of the method supports the cultivation of author's critical thinking for cognition and knowledge, the development of situational improvisation skills, spontaneous creativity and other aspects based on natural potentials and the environment, related to effective decision-making and correct behaviour in complex and dynamically changing conditions, including managing interventions influences and coincidences (Taleb, 2013, 2014).

In the context of adult education and training, personal and professional development, in terms of problem-solving and decision-making, knowledge sharing and leading people and human systems, the practice of the reflection method allows an individual to have mental mobility at different levels of reference. These reference planes then provide an insight into the phenomenon, the problem, the area of interest of the solution, from various angles, the reference contexts and the environment. They also allow the practising individual to identify where this viewing is coming from, whether in terms of context, preconcept, cognitive (mental

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[8] Carl Gustav Jung believed that „the human psyche's wealth and essential character is determined by reflection." In this sense, he considered reflection to be: „.... a cultural instinct par excellence", the power of which is manifested in: „.... the power of culture to maintain its place alongside untamed nature." Reflection is usually understood as mental activity, a specific process-oriented to the partial contents of consciousness. Reflection is also considered a cultural instinct operating in religion's background and searching for the meaning of being, life. We quote from an excerpt from the book by C. G. Jung: Man and Soul (Jacobi, 1995, p. 39): "Reflection is a reservation of human freedom against the necessity of natural law. As the word „reflexio" suggests, namely „bending back", reflection is a spiritual act in the opposite sense to that of the natural course. It is about stopping, self-awareness, creating an image, taking an inner position and dealing with what we see. We should, therefore understand reflection as an act of awareness. „

[9] For more details, see Bateson (2018, p. 474-482), Heidegger (2018), Cardal (2018).

[10] U. Eco, the Italian philosopher and semiologist, discussed cognitive types and the effectiveness of the continuum model in an inspiring way, in the context of cognitive sciences (2011, pp. 54, 125).

model), paradigm or system-level, or the observer's intention or position attitude in the situational context or target state.

Practising the reflection method means developing the ability to see or become aware of the sources and processes that allow us to shape our cognition and formulate our thoughts. That is, resources in the form of cognitive or mental models that we have taken over in the development process and how we model or construct the world we live in and know.

3) Intention Method

The intention method has, in its foundations, the concept of autopoiesis. In ordinary reality, i.e., socio-cultural, aspects called autonomy or authorship derive. Autopoiesis is a type of constructive circularity and internal organisation in living organisms, which both Bateson (2006, 2018, p. 438 – 444) and Maturana and Varela (2016) refer to as functional closure[11].

This functional confinement is inherent not only in the cell, but also in the complex systems that make up the cells, whether the human being or nervous system, and then: *„This neural closure determines the way we relate to the environment, which means not the selection or processing of information, but the determination of what counts as relevant, which is a crucial point of this alternative aspect."* to representationalism, which assumes that: *„...knowledge is based on the acquisition or selection of a predetermined world's relevant features, which can be naturally broken down into significant fragments. In the usual neuroscientists' jargon, this process is encoded in general terms such as „obtaining information from a signal" or „acting adaptively". That requires knowledge on predetermined things globally and does not allow for the creation of the meaning and significance of the living organisms self-autonomy."* (Maturana, Varela, 2016, p. 224-225).

In systemic andragogy, the intention method applies and develops an order model, elaborated by systemic therapy and used in systemically oriented coaching. The purpose of applying the intention method and the order technique in practice is to develop a person's ability to know accurately and concretely, be aware of, and name what he needs and wants. That allows him to usefully and consciously manage his studies and, in a broader context, the process of his individuation, personal life, including professional maturation. The intention method is based on the principles of pragmatism and is inspired by the theoretical models of K. Lewin (2019). In practice, it allows to „follow" and proactively, consciously organise „learning", realistically design and „program" the individual´s natural potential, in the conditions, circumstances and direction of his life and career.

Moreover, his further education, development, cultivation, and usefulness. We perceive the intention as a broader environment, going beyond the current „situation" or context. The intention, on the one hand, represents a „shape" that continually evolves in the process of human existence, on the other hand, partially related aspects, events of activity and phenomena, which, when looking at the whole „path" of an individual's life, appear as a kind of life trend.

The method's practice allows realising, distinguishing, identifying and naming the participating influences, frameworks and limits, sources and directions. It affects the individual, the social systems, the individual´s internal and external environment, and contexts. It creates conditions for cognition, decision-making, visions formulation, goals and orders, including partial steps of the implementation procedure in the near and distant future.

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[11] The topic of „functional confinement" has more profound consequences, especially in the context of epistemology, where, for example, the thesis of „cognitive confinement" (McGinn, 1989; in Marvan & Polák, 2015, p. 26-27), concerning processes and states of cognition. Moreover, consciousness, and the relationship between consciousness and the nervous system or brain, where various scientific approaches, models, and theories „oscillate" between subjectivity and objectivity, lead to radical scepticism about meaningfully addressing topics, and issues of consciousness by objectivist methods of science.

The intention method for partial or specific contexts, situations, and processes includes techniques whose name is taken from the language of „business" or better from the area of meaning, values and usefulness of a particular thing (knowledge, methods) for a particular individual context. These techniques are called order and supply. The order represents a broader framework of cooperation, identifng sources, meaning, and significance of the learning process's effects or result.

The supply is the name for the technique of cognitive activity, focused on specifying the examination of the system condition, quantitative and qualitative analysis of situation and context conditions and circumstances, awareness of priorities, value frameworks, specifying the form of „goals" and partial steps in achieving them (Hagen & Park, 2016). Generally, it creates the conditions for subsequent cognitive progression in the currently possible way and potentially in the most effective direction. For example, in the educational process, it represents focusing on selected aspects of a particular scientific discipline, subject or field, usable by the student in his practice. We perceive the order as a personal construct, a conscious result of the relationship between the individual and the environment, in the intended context. It is created on the system and the environment „interface". Work with the intention focuses on three fundamental levels:

1. The level of self-awareness in the sense of the emergence of personal constructs (e.g., the reflection method or dialogue), formulating the intention and order. The purpose is to be aware of the connections, meanings and sense, as a basis for developing goals or setting priorities when planning steps to achieve them.

2. The existential level represents the following of a pragmatic approach in terms of usefulness. Work with values, meaning quality criteria, sense and satisfaction (e.g., work with the minimum necessary or possible change, the minimum from the minimum in terms of usefulness, etc.).

3. The proactive and developmental level concerns discipline, education and human learning, and relates to individualisation and the cultivating professional mastery process. It focuses on the conscious and reflected evaluation of experience, distributed knowledge in creating cognition (individual´s constructs, professional environment, the environment of performance, change, etc.).

The intention method enables, in terms of study practice and study „problems", to focus more on their practical, factual, functional and realistic solution and its development, for the identification of exceptions, the analysis of resources and the evaluation of future opportunities both in the personal and professional framework and in the framework of study cooperation. It focuses on the preferred future, concretisation and specification of its form, for example in terms of the formulation of specific educational needs or individual approach to topics (e.g., concerning professional specialisation and its development).

4) Selected Application Effects

We have been applying reflection and order methods from the very beginning of the study practice. We intentionally use the concept of practice/internship, because the „knowledge" recorded and passed on by various schools in the form of cognition systems and methods only makes sense to study through practice. Closely related to the concept of practice is the idea of study derived from the word „studio" in the sense of „interest". From an individual´s point of view, mind, cognition, and „learning", education, we are inspired by considerations that lead to the fact that a particular person's real knowledge does not lie in the diversity of

expertise but their original creation in the conditions and circumstances of a specific context and situation.

The effect of studying and learning, using reflection and order methods, in systemic andragogy is conscious action. We perceive study and learning as proactive, non-linear, intention-oriented and organised, the reflection-cultivated process of a complex conscious relation of man to the questions „Who am I?" and „How am I?". This process is not about exchanging or supplementing knowledge, but about conscious cognition and decision-making, which continually accompanies our actions and changes and modifies them.

The learner's original behaviour is „retained", but education and learning instead complement and expand the „palette" of attitudes, approaches, models, methods and techniques. An individual can creatively modify and apply them in changing conditions and circumstances of specific situations, contexts and environments. Therefore, it is not just a matter of choosing from various alternatives what to do and how, and increasing negotiations' effectiveness by choosing a more useful way. Instead, it is a topic of propaedeutics or a fundamental level of education in a specific field or standardised profession, requiring, e.g., the acquisition of professional practice methods instruments.

However, the dynamic environment and professional practice development have long pointed to two phenomena. The first is providing the „student" with knowledge and methods, ideas and assumptions about functionality. It is a kind of „vest" for existence, functioning and „survival" in the professional environment, providing tools and „content pockets" for various functions and purposes. The suitability of the method, means and skills plays a role. The preference and skills used are cultivated in reflected practice and contribute to professional expertise or specialisation.

The second phenomenon pointed out by practice is that it seems more efficient (time and energy) to cultivate the ability or competence to create a „new" tool in the process of task implementation, than to rely on the effectiveness of the experience, given that every other situation is a „new" reality. These aspects are more related to professional intuition, professional art or mastery.

The ability to capture both phenomena is a matter of excellence and relationships in educational processes. It means learning by remembering all we can and cultivating it (Bondy, 2020, p. 220). This pragmatic „selectivity" applies to adult education, especially if we want to acquire knowledge „from elsewhere". In our experience, the application potential of the reflection and intention methods to strengthen this ability has a positive effect in particular in the following aspects:

Student´s perspective:
- Supporting an effective learning process to what is needed and useful for specific personal and professional practice.
- Cultivation of critical and creative thinking and mobility concerning the cognitive continuum, cognitive and mental models.
- Self-management, independence, committed initiative and proactivity, competence and responsibility.
- Self-management and self-reflection (discipline and self-sufficiency, thinking about what, why and how I act, the selectivity of resources and efficient use of time, etc.).

Tutor´s perspective:
- Development of pedagogical and andragogical potential in the sense of strengthening the

ability to virtually transfer (communicate and share) knowledge, skills, experience, and thinking principles.

- Contribution to the development of respectful learning cooperation (reasonably demanding, supporting and encouraging), and the tutor´s mobility in organising the relationship development, pressure and leadership, useful and meaningful help, and practical support to achieve goals.
- Ability to create a partnership (open and direct) relationship in the educational process with clearly defined boundaries, shape education in the process, interact with students' academic needs, and the professional environment's needs.
- Cultivate and develop the field and study program using direct, specific requirements or „fresh" information from current, evolving professional and social practice.

5) Conclusion, practical experience, limits

The methods´ effectiveness is manifested mainly in MBA, LLM, MSC programmes and in standard education programmes for qualifying studies, whose participants emphasise the pragmatics of the education and learning effects, usefulness and usability in personal life, and current professional practice. These are programmes attend students with internships or carrying out training simultaneously, or deciding to study to supplement their qualifications within their corporate or specific organisational or professional environment, usually of a corporate nature. The effect of applied methods for the formulation and concretisation of individual and professional educational needs is most evident among these programmes' students. It also plays a significant role in shaping the study cooperation process.

The application's effectiveness reflects more in personality aspects, and their share in managing study problems in full-time and extra-mural programmes, at the bachelor's degree level attended mainly by recent high school graduates. In master's programmes, students can also specify their educational needs more and are involved in study cooperation, including those who do not have much practical experience.

In general, the application of reflection and order methods contributes to the growth of interest in study issues, strengthening the quality of mutual feedback, increasing personal contacts´ frequency during the study and after graduation. The tutor–student relationship turns into coaching, mentoring or consulting practice. Extra-mural study form and MBA, LLM and MSC students appreciate the effect of practice/internship and the application of reflection and order methods. Full-time students emphasise the contribution to their fundamental orientation in studies.

Creating conditions for applying these methods by tutors is not economically, systemically or time-consuming. The aim is to get acquainted with the essence and master simple methodological procedures and creatively use them the pedagogical practice. Subsequent methodological support and mentoring are also appropriate.

The methods are demanding especially at the study beginning concerning the time and organisation needs and the individual approach and require them to formulate and specify educational needs and distinguish the study´s usefulness and effectiveness. Their application also contributes to the „interest" group differentiation. Modern technologies enable to create specialised seminars for a narrow circle of students. In this respect, „action" thematically focused seminars and courses can be set up for „self-learning teams" and those interested.

The discipline is one of the significant effects of the reflection and intention methods practice, observed both at learners and the learning system and tutors. It is: „... *the basis for cultivating the mind, thinking and cognition.*" (Ambrozová et al., 2016, p. 43, 129). It supports the permanent occurrence of the „learning system" phenomenon of „a teaching discipline" in

the original sense. This discipline is „two-way" as „learning" represents „ the inner attitude" of the learner, the educated and the educator (teaching someone or something). Be it a human individual (tutor) or a specialised (expert) human system, institution, school, academy or university. The Latin origin of the word discipline bases on the term *discipulus*, referring to the willingness and readiness to change the way we look at ourselves and the world.

The term *discipulus/discipul*, has the meaning of a student, a learner, and a distinction must be made between designating or naming someone as a pupil, a student in the sense of someone who is „taught," and someone who „learns." For this need of distinction, we use the term *discipulus interior* (inner pupil or student) whose „presence" the reflection and order methods make more apparent. However, a psychological construct manifested in critical thinking, curiosity, and scepticism.

Discipline in the context of systemic andragogy allows us to cultivate our mental vitality consciously, meaningfully and effectively and to organise and use our „energy", resources and potentials and those of the environment. To „go out" beyond habits, stereotypes and so-called comfort zone, support our „willingness to control", and the ability to create knowledge, to make meaningful decisions and to act consciously, in complex and dynamically evolving and changing conditions of situations and the modern environment context.

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The innovative approaches in senior education

Inovativní přístupy ve vzdělávání seniorů

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Abstract:

We present the implementation of innovations in the education of seniors. Theoretical knowledge is supplemented by research findings in 2019-2020. Quantitative and qualitative research is complemented by a description, analysis and comparison of the views of managers and students UTA. We identify and show the innovative elements in senior education which are applied by some countries in Europe. Innovation in senior education does not mean something new for other target groups in education.

Key words:

Innovation, geragogy, senior education, university of the third age, ICT.

Introduction:

Senior education is a specific segment of lifelong learning. It is specified by the target group of learners. Each person with an ambition to manage, educate or evaluate this process should be familiar with the general, scientifically verified knowledge related to individual attributes of education for elderly people. At the same time, the individual characteristics concerning their health, motivation, previous experience (educational as well), socioeconomic status must be taken into account. The mentioned findings work also in the field of geragogy, especially consultancy for older people, having the facilitating potential considering senior education.

Training and education for elderly people must follow the knowledge of several scientific disciplines focused on senior education primarily or secondarily. We are aware of the fact that innovation can encourage all curriculum categories but our emphasis is placed on the process.

1. Ageing population

Population ageing is also confirmed by the statistical figures. The survey into the structure of the Slovak population according to the age groups seems to be of essential importance.

Table 1 Population of the Slovak Republic by age groups

Slovak republic	The number of population	0-14		15-64		65+	
		N	%	N	%	N	%
2019	**5 457 873**	**863 720**	**15,8**	**3 688 978**	**67,6**	**905 175**	**16,6**
2011	5 397 036	826 516	15,3	3 886 327	72,0	682 873	12,7
2001	5 379 455	1 015 493	18,9	3 705 515	68,9	610 923	11,4
1991	5 274 335	1 313 961	24,9	3 415 721	64,8	543 180	10,3
1980	4 991 168	1 302 072	26,1	3 162 504	63,4	519 388	10,4
1970	4 537 290	1 232 721	27,2	2 883 333	63,5	418 340	9,2

(Source: Statistical Office of the SR)

Based on the data analysis presented in Table 1, the following findings can be stated:

- the number of people at the age of 65 and older in the Slovak Republic has continued to grow during the last half-century. This trend is obvious especially from the late 90s while rapid acceleration can be observed over the past decade. In the year 2019, the population aged 65 and above was 16.6 % of the total population in the Slovak Republic. In terms of the growth potential of the older people, Slovakia is ranked the 28th country in the European Union; it means it belongs to the countries with the fastest-growing population aged 65 and above. This implies that Slovakia will become one of the European countries with the oldest population. At the same time, since the 2030s, the population aged 80 and above will gradually grow and it will result in an increase in the average age of the senior population. In the year 2060, the average age of almost 78 is supposed to be, in comparison to the age of 74 at these days (Repková et al., p. 5);

- population's growth rate at the working age (15-64 years) by 4.4 % was observed slowing down over the past few decades (from 4.1 % in 1991-2001 to 3.1 % in 2001-2011). Over the last few years (2011-2019), a decrease by 4.4 % was observed. On the contrary, the percentage of the population at the age 65+ accelerates, from 1.1 % in the years 1991-2001, or 1.3 % in 2001-2011 to 3.9 % in the years 2011-2019;

- this trend reflects the demographic development in the European Union. In the years 2016 – 2080, the population at the working age is expected to decrease constantly until the year 2050. After that, the number of people at the working age will stabilise and the older population will become a more significant part of the population, compared to 19.2 % in the year 2016, the population at the age 65+ will represent 29.1 % of the population in the countries of the European Union by the year 2080.

Finally, it can be stated that the population is getting older not only in Slovakia. Following the document of the European commission "Ageing Report" (2015) it is expected that the average life expectancy for men in the EU will increase by 7.1 years over the predicted period (by the year 2060) and in 2060, its value will be 84.8. In the case of women, an increase by 6.0 years is expected, whereby, in the year 2060, the achieved value will be 89.1 (The 2015 Ageing Report, p. 1). The number of people at the age of 80 and above will be almost identical with the young population in 2060 (Ibid., p. 20).

Trends in Europe are described also in the report published by the United Nations in the year 2017 entitled "World Population Ageing" dealing with the global statistical data. In addi-

tion, there is mentioned the fact that in the year 2017, the world population aged 60+ consisted of 962 mil. people, i.e. the number is two times greater comparing to the year 1980 when the total number of older people at the given age was 382 mils. It is expected that the number of older people will be doubled by the year 2050 and the total number will be almost 2.1 milliards (World Population Ageing 2017, p. 1).

2. The educational contexts of senior education

Views on the current system of sciences focused on education and training (education sciences) are based on understanding teaching and learning as a lifelong process. This way, we can speak about stabilized and accepted process supported by a theoretical investigation. Scientific discipline focused on theory and methodology of teaching and learning for seniors can be considered an inseparable and integral part of the system. It is one of the youngest disciplines of education sciences accompanied by many discussions aimed at its scientific fundamentals. A discussion of the approach to the title of the scientific discipline can be mentioned as an example. A brief investigation into scientific terms associated with education sciences shows that there are several terms used to determine theory of senior education in our language environment.

- gerontopedagogy – is a term used by an author of the first theoretical publication dealing with the issue of education and training for older generation, by E. Livečka (1979). Taking into account the importance and contribution of his work, this term cannot be considered sustainable in terms of etymology (two different ontogenetic developmental stages are included in it : "geron" – Gr. old person, or "pais" – Gr. boy/child);
- gerontagogy – is a term used and accepted by the Czech scientists (e.g. its deep explanation mentioned by J. Veteška in his work published in 2017, p. 91);
- geragogy – is a term used especially by Slovak scientists, explained in terms of terminology by an internationally recognised scientist in the field of senior education R. Čornaničová in her key work Senior Education. Origin, Development, Stimuli of Geragogy (1998). Subsequently, it is frequently used by other significant Slovak as well as Czech authors (Határ, 2014, Balogová, 2005; Špatenková & Smékalová, 2015). The term geragogy is preferred by the authors of this publication and at the same time, they state that heterogeneity of terminology associated with the title of the scientific discipline dealing with the issue of senior education is not considered crucial, although it does not contribute to an exact definition of this discipline of education sciences.

Effective transdisciplinarity is an important factor in terms of new issues of geragogy or in terms of an innovative approach to the scientific understanding of traditional issues of geragogy. Actual Slovak and Czech geragogy can be presented by various scientific publications and scientific works focused on theory, methodology, or empirical studies. It results not only in continual improvement in the position of the theory of geragogy but, at the same time, in its role as a medium of instruction. According to V. Prusakova (2005, p. 15), scientifically verified theory is transformed in requirements with real potential to improve the quality of the practice of geragogy. Besides above-mentioned works of the well-known Slovak and Czech scientists focused on geragogy, new ideas or topics explored in an innovative way have been mentioned by new authors over the past decades. Forasmuch as all publications and authors cannot be mentioned, our attention can be forced on following topics:

- senior education and trainings in institutes (Határ, 2014, 2011),

- intergenerational learning and its potential (Rabušicová & Kamanová & Pevná, 2012; Len-hardtová, 2015),
- senior education and their competences (Špatenková & Smékalová, 2015; Krystoň & Kariková, 2015),
- ageing (Formosa, 2012; Vavříková & Hudecová, 2018),
- active ageing (Tokovská & Müller & Hirtlová, 2015; Swindell, R. F., 2012; WHO 2002, 2015),
- innovative approaches to the content and processes associated with the education for an older generation (Balogová, 2018; Gracová & Spulber & Selecký, 2017; Jacob & Janeiro, 2015; McIntosh, 2005; Selecký 2017; Thalhamer, 2014).

Following the facts and findings, it can be stated that geragogy is an established part of education sciences with defined subject of investigation, functional intradisciplinary collaboration, high-quality scientific research and potential to develop although there are many issues to deal with in the near future (Határ, 2011, p. 83).

3. The innovation in senior education – methodology

Innovative approaches in senior education and training for older people must be perceived sensitively and their contribution must be evaluated in an all-embracing way. Negatives and positives can be observed as well as limits given by the type of a target group or by specific conditions (personnel, technical, organisational,....) typical for the educational process. To explain in simple words, when implementing innovations in senior education, functions or effectiveness must be assessed primarily in terms of people educated.

The research was conducted as a part of an international project 2018-1-SK01– KA204-04629: "Increase and Development of Manual Skills and Physical Vitality of Citizens of the European Union over 50 years".

Research methodology

Both quantitative and qualitative research methods provide a description, analysis, and comparison of opinions of managers and students engaged in education at the institutes in mentioned countries. Employing both qualitative as well as quantitative research methods are considered well-founded concerning the objectives of the research following the recognised references focused on methodology (Průcha, 2014, p. 108; Punch, 2008, p. 74).

Research question

"What innovations are used at selected foreign institutes designed to educate and train seniors."

Research sample

No. 1 – consists of 5 managers of the Universities of the Third Age (UTA) from the selected European countries (Portugal, Spain, Poland, Czech Republic and Slovakia).
No. 2 – consists of the students of the UTA from selected European countries (Spain, Portugal, Poland, Czech Republic and Slovakia).

Research methods

a) the questionnaire for managers of education:
It was distributed to managers participating in the international project from March to May

2019. With respect to the project objectives, the questionnaire consisted only of open-ended questions that require more than one word answers.

b) the questionnaire for the people educated:

It was distributed to students participating in the international project from November to December 2019. Closed-ended dichotomous questions, questions with the responses from a distinct set of pre-defined responses, such as "yes/no" or among set multiple choice questions were used. The questionnaires were distributed personally handed out to achieve a higher response rate.

c) standardised interviewing with managers of education:

It was a tool to determine managers' approaches to managing UTA, especially implementing innovations in the European environment. The questions were prepared in advance in the Slovak and English language.

4. The innovation in senior education – research results

We were interested in what is understood as innovation in education by individual groups of respondents. The managers of UTA responded to the mentioned question as follows:

Respondent 1: "It does not mean something completely new. There are many ways to teach the same topic. In my view, defining and using the most suitable strategy is one of the most important factors to motivate seniors to study hard all year round. "Walking football" is an excellent example that works in Portugal. Movement – sports activity is connected with socializing and improving mental health. Football is a game known by everybody but "Walking football" can be considered an innovative physical activity for seniors. And this way, the innovation in senior education can be understood."

Respondent 2: "For me, it means any ways or methods resulting in the improvement in teaching and learning process."

Respondent 3: "Something new, something we have not heard about it before."

Respondent 4: "It causes positive emotions, because I like innovations. According to my opinion, innovation should be a part of everyone's job – no innovations result in stagnation. Stagnation is a prolonged period of little or no growth, it means nothing positive."

Respondent 5: "In my opinion, innovation is an implementation of new practices supporting the teaching and learning process and improving the quality."

Table 2 What do you mean innovation in education?

What do you mean innovation in education?	SVK	CZE	POL	ESP	POR	average
method to improve education	3,45	4,50	5,05	4,40	4,40	**4,36**
way to improve education	3,90	4,15	5,20	4,25	4,10	**4,32**
something attractive	4,15	2,45	4,90	4,35	5,65	**4,30**
seniors motivation for learning	4,00	3,40	5,20	4,25	3,25	**4,02**
something new	3,40	4,25	4,90	3,35	3,70	**3,92**
opposite of stagnation	2,40	2,25	4,55	4,15	2,40	**3,15**

(Source: own research)

The students – respondents were asked the same questions in the questionnaire. Their task

was to evaluate individual alternatives describing innovation in education using the scale of significance. (6 = the most significant, 1 = the least significant).

The analysis of the respondents' responses showed that innovation is regarded by both groups (students and managers of UTA) as a positive phenomenon enriching the education, improving the quality, and attracting the students. Following such a positive assessment, it can be stated that innovations are not viewed in a negative way, as a fear of change that can make people resist the best of ideas. In terms of the concept of education, innovations are connected especially with the processes of education (way, form, method, etc).

We were also interested in innovations associated with technology the seniors are experienced with.

Table 3 Experience with innovations of technical and technological nature – UTA students (No.2)

Technical and technological innovations	SVK	CZE	POL	ESP	POR	N	%
Social networks (FB, YouTube, Twitter, Instagram)	15	3	16	17	7	58	24,6%
Communication (Skype, Viber, FB Messenger, WhatsApp)	12	0	17	14	6	9	20,8%
Student´s card	1	14	1	17	13	46	19,5%
Virtual UTA	13	0	8	20	3	44	18,6%
on-line, off-line courses	5	3	3	8	1	20	8,5%
MOODLE	7	0	0	6	0	13	5,5%
MOOC courses	0	0	0	6	0	6	2,5%
Total	53	20	45	88	30	**236**	**100 %**

(Source: own research) note: The respondents could mark more than one answer N > 100.

The presented results correspond to the reality mentioned in previous parts of the article and confirm the findings that seniors attending the UTAs are open to using new technology, innovation, especially with respect to the communication functions. On the contrary, our findings confirm that innovations connected with new education technology or processes of education are not so attractive for seniors and are not viewed positively.

5. Discussion

The aim of presenting the above mentioned empirical findings was to explore the real situation in the field of implementing innovations in the process of senior education under the specific conditions of the Universities of the Third Age. The basic research question was formulated: "What innovations are used at selected foreign institutes designed to educate and train seniors?"

Following the comparative content analysis of the responses, it can be stated as follows:
• Innovation is a well-known topic by the managers and students of the UTAs generally evaluated in a positive way. Innovation is viewed as a new and inspiring element enriching teaching and learning process affecting its quality.

- Project participants – managers of the UTAs mentioned that they are experienced with innovations. Specific examples of teaching and learning activities considered innovative by managers were described in the research. Types of innovations vary. There are innovations associated with a content ("Walking football", "Radio senior", "Tourist guides"), with a concept ("Peer to peer education", "Intergenerational cooperation", or "Intergenerational learning", "Seniors for seniors"), as well as innovations based on modern education technology ("Virtual University"), or using modern information and communication technology (university information system, SMS gateways, communication applications, social networking sites, etc.). Participants from the UTAs are experienced especially with innovations associated with modern technologies. Important but not surprising is a finding that (confirmed by one of the managers, too) innovation need not to be a unique element, it can be a common phenomenon (football, radio broadcasting. tourist guiding, student cards, Facebook,...) in other areas of life, conditions, population group or other institutes (including those aimed at education).
- The managers of senior education see not only advantages – positive impact of innovations but also potential limits or risks related to their application to senior education Depending upon the individual type of innovation, the most considerable benefits were mentioned:
a) concerning seniors: motivation, development of cognitive abilities, knowledge acquisition, acquiring new or developing existing skills (especially those connected with modern communication and information technologies), expanding the social network, active participation in society (supporting active citizenship), active ageing.
b) in relation to organisation and managing the education processes: effective communication, creating effective administrative procedures, but mainly effective information spreading affecting the interest of seniors in provided education (education marketing strategies).

Risks or disadvantages of innovations mentioned in responses were connected with specific activities. The most important negatives were: different levels of seniors' ability to cope with tasks (e.g. differences in digital literacy), or heterogeneity in target groups, time and organisation, difficulties with human resources, frustration due to unfulfilled demands, negative effects of multitasking. The value of the findings is very high also in the field of geragogy – consultancy for older people.

The response of one of the project participants can be considered valuable and meaningful corresponding with our assessment of innovations in senior education: "What is considered innovative by managers might not be perceived to be innovative by seniors."

Summary

Following the theoretical analysis of the present and future social, mental, educational, and institutional context of senior education, it can be stated that the room for innovations is not only made but it becomes an inevitable condition for its further development. Innovations must be viewed as one of the reactions related to changes in seniors' needs resulting from the social, economic, cultural development as well as technological advances. At the same time, they are one of the opportunities to meet changing seniors' needs. Respecting exogenous as well as endogenous factors is one of the essential conditions determining the effectiveness of innovations in the process of senior education. In other words, the scope and nature of innovations mentioned in various strategic documents and similar sources of domestic and international provenance must be assimilated according to individual personal traits and living conditions determining the target group or personality participating in the education. When the principle is not taken into account, the risk arises that the role of innovations will change.

They will become mental, material and organisational barriers to education. Such a demand exists also in the case of innovations in the geragogy practice based on the utilisation of modern technology and processes expanding these days. They are at the centre in this text.

The intention of the authors, content and methodological construction of the publication covers the context of the mentioned opinions. The article is intended for the scientific community aimed at geragogy as well as all other professionals dealing with individual aspects of education of older people.

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Solving crisis situations with repeated aggressive behavior of the child from the perspective of educators in educational facilities for the provision of institutional and juvenile correctional education

Řešení krizových situací s opakovaným agresivním chováním dítěte z pohledu pedagogů ve vzdělávacích zařízeních pro poskytování ústavního a nápravného vzdělávání

Zdeněk Svoboda, Arnošt Smolík, Laura Pérezová

Abstract:

The paper is a partial output of a more complex empirical probe and builds on an already published text entitled *Analysis of the educator's readiness to deal with crisis situations as a starting point for further education* (published in Veteška et al. 2020). The paper focuses on the issue of readiness of educators of educational institutions for solving crisis situations with aggressive behavior of the child. In this case, it is a choice of strategies of the teacher in the case of repeated aggression of the educated person. The aim of this part of the realized empirical probe was to identify and describe the pedagogical and systemic procedures that respondents prefer in solving crisis (conflict) situations. These findings are the basis for formulating the probable causes and consequences of the identified preferences. The results of this study can be used to improve the further education and professional development of educators in this type of facility.

Key words:

Conflict, aggression, repeated aggression, crisis situation, institutional education, educators.

1. Introduction and theoretical background

In the past two decades, the system of educational facilities for the provision of institutional and juvenile correctional education has been subjected to various (in the opinion of experts working in this segment of pedagogical activities often controversial) interventions and has gone through several usually unsuccessful attempts to improve work with children with severe social deviation. Already in our previous publications (Smolík and Svoboda, 2012; Smolík, 2016) we dealt with the topic of possible improvement of the operation of the above type of facility. One of the key areas of this topic is the development of professional and personal competencies of educators.

When defining the role of the educator, focusing on educational activities in institutions of alternative educational care, it should be borne in mind that we are talking about pedagogical staff whose primary pedagogical activity is carried out outside of teaching. Education in facilities working with children with severe social deviation is generally perceived as a significantly more complex activity than teaching taking place in a school environment. This is due to

the fact that education in this type of facility should actively shape, socialize, or "re-socialize" the personality of the individual.

The educator should be an expert in targeted, systematic work, focused on meeting the individual needs of the child. We therefore consider it important that he is at the same time a personality with a profiled value system, with adequate education, appropriate professional competencies for the application of a wide range of educational methods. He should also have personal competencies that would allow him to act appropriately on children given to keep.

As part of our research activities, the results of which we present in this paper, we have focused our attention specifically on the activities of educational institutions. Pedagogical activities take place in the mentioned institutions with the aim of systematically influencing the child's personality, actively changing it, educating, and bringing up the child, therapeutically supporting, leading to a quality form of self-education, self-control (Mueller & Thomas, 1992) and at the same time correcting the mentioned serious social deviation. Filley (1975) and Myers (1993) point out that in the framework of educational activities aimed at the overall development of the individual and the correction of a severe social deviation, there are often conflicts between educators and children. In our opinion, the ability to respond adequately to manifestations of inappropriate behavior should be one of the important professional competencies of the educator in facilities working with a child with a severe social deviation. The main goal of the research probe was therefore aimed at finding out and evaluating how educators are prepared to respond in stressful situations such as conflict with repeated aggressive context. The partial goal was to find out how sophisticated pedagogical procedures and strategies are chosen in an effort to influence the child more broadly so that the above pattern of behavior disappears from his repertoire of social strategies. (Svoboda, Smolík & Pérezová, 2020; Smolík & Svoboda, 2012, Smolík & Svoboda, 2015).

2. Methodological background

For logical reasons, the methodological basis of this part of the empirical probe was partially identical to the already published part (Svoboda, Smolík & Pérezová, 2020).

The basic intention of the research required to grasp the research problem as relational. The subject of the research was the dependence between the severity of the described educational situation and the chosen educational strategy from the position of an educator. Partial research questions were then descriptive in nature. The expected outcome was an assessment of whether the monitored educators respond to the child's recurrent aggressive behavior by changing the degree of directivity of the approach. Furthermore, whether and to what extent within the projected approach, the three categories of the system fulfill the construction of functional educational interventions. These monitored categories were: 1. definition of the standard or change in the area of definition of the standard (definition of barriers, Chapter 3.2), 2. social assistance (social support), 3. social control.

The research sample (N = 52) consisted of educators of educational institutions, in the age range of 30-50 years. There was a predominance of men in the research sample, however, the ratio of men and women is an adequate ratio within this type of facility. All respondents had at least three years of pedagogical experience. Data collection was carried out through a non-standardized questionnaire, using a situational approach. The questionnaire contained a brief description of potentially real conflict situations (micro-stories) between children and educators in educational institutions. The construction of the used micro-stories was based on real situations described by the workers of the mentioned institutions.

In their answers, the respondents responded to a total of four described conflicting educational situations. The individual micro-stories differed in the plot and especially in the degree

of severity of the described aggressive manifestation of the child. A common feature was that in each micro-story a situation was described which had already been repeated at least twice within the educational activity of the educator. Situations were deliberately presented in such a way that the aggressive conflict escalated in them, according to the degree of social significance. The described repeated aggressive behavior of the child gave the possibility to consider this strategy chosen by the child as relatively strengthened. Thus, it could not be considered randomly chosen or easily replaced by another, more socially acceptable, strategy.

The expected pedagogically – psychologically functional response should be the emphasis of teachers on the use of strategies falling under the monitored categories No. 2 and No. 3. This would mean offering social assistance, i.e., replacing the child's dysfunctional strategy with a functional strategy and then continuously checking whether the new strategy is strengthened in the child's personality.

The first micro-story describes a situation in which a child chooses passive aggression, the second story contains a description of the manifestation of verbal aggression, the third story was already focused on physical aggression with significant affective potential on the part of the child and the last story described the planned physical attack on the educator.

To illustrate, we present the wording of micro-story number 2: *„ The educator sent Honza to his room to write his homework, which he has for school the next day, Honza replied to the educator that he was "buggering" his homework. The communication situation took the following form: Educator: You know it's time to get ready for school, so go to your room and do your homework. Honza: Fuck you, I won't do anything, you won't force me!" This situation has been repeated several times and has been going on for a long time (about a month).*

The research tool was created primarily to collect data aimed at identifying the expertise of educators. We proceeded from the assumption that professional knowledge and the ability to think strategically are the basic starting point for the educator to be able to purposefully set pedagogical activities (even in the longer term) and choose adequate educational methods and procedures (including the selection of appropriate rewards or, conversely, sanctions with their informative and formative potential). The subject of the analysis was also how the choice of pedagogical strategies from the position of an educator will be influenced by the subjectively perceived level of severity of the situation and what degree of directivity of the approach educators will choose in this context.

The processing of the obtained data took place in three content levels. It was primarily a question of finding out whether educators reflect the aggressive behavior of children in stories as escalating in terms of social significance and accordingly, as more pedagogically demanding. The monitored variables were the increasing intensity of the conflict, the degree of aggression and continuity from a one-time excess to repeated thoughtful negative actions. The respondents assessed the subjectively perceived severity of the situation on a five-point scale. Findings in the level of partial goals in categories No. 2 and No. 3 were connected so that their logical connection, interpretation, and potential graphical representation is possible. Therefore, the additional designations of vertical and horizontal levels were also used.

The second ("vertical") content level of data processing aimed to determine the extent to which educators use the three levels of pedagogical approach to influencing the child's personality system in the expected response to the situation. This procedure is based on the principles of cognitive behavioral therapy and includes the possible use of defining norms (behavior boundaries), social support and social control. The answers of the respondents were assigned to the above categories within the content analysis. Optimally, the declared strategy of the educator's response to the situation covered all three of these categories.

Otherwise, only one. The third ("horizontal") content level was focused on the assessment

of the degree of directive within the proposed educational procedures. The degree of directivity was assessed using a five-point scale with extreme poles at the level of "management – accompaniment" (a detailed description of the categorization is given in chart 1). We also had the opportunity to indirectly deduce other "metadata" from the data obtained. For example, the ability of pedagogical planning, the ability to set adequate goals, the expected functionality of the interconnection of individual access categories listed in the second content level of the analysis, etc. The obtained research data were evaluated or statistically processed regarding their nature (in detail Svoboda, Smolík & Pérezová, 2020).

3. Results

3.1 Findings and interpretations in the field of assessment of conflict situations from the point of view of the educator in relation to the increasing aggressive expression of the child

In this part of the empirical probe, educators working in educational institutions had to respond to the increasing severity of manifestations of aggression, from the least serious one-off act to the most serious repeated manifestation. For logistical reasons, these answers of the respondents in relation to the presented situations (micro-stories 1 – 4) were divided into two groups. The first group consisted of reactions to situations in which a single aggressive manifestation of the child occurred and the second reaction to situations in which aggressive manifestation of the child repeated itself. Repeated manifestation was mapped by verbal inquiries, by which a record sheet was supplemented by. As part of the further analysis of respondents' reactions (Chapters 4 and 5), direct answers to the questions asked were evaluated, but also their content intersection with an explanation of the respondent's choice of pedagogical strategy (Chapters 3) and the degree of directivity applied within the chosen strategy, proposed pedagogical solution of conflict situation (Chapter 4).

Within the descriptive analysis of the first group (see Svoboda, Smolík & Pérezová, 2020) it was found that educators reflected the increasing severity of aggression, however, only in the case of the first three submitted micro-stories. However, for the third and fourth, the median value (in the assessment of the subjectively perceived severity rate on the rating scale) did not differ. It can thus be stated that the respondents, in terms of severity, do not basically distinguish between aggression significantly conditioned by affection, i.e., rather spontaneous aggression and aggression carried out thoughtfully, based on the previous plan. The results of the normality test showed that only in one case the data coming from a normal data distribution, with a p-level terminal value of 0.05.

It was therefore necessary to assume that we were operating with data that came from a non-normal distribution. Thus, the Kruskal-Wallis test was used for further statistical processing. The applied test showed that the answers cannot be considered random and there is a statistically significant difference between them. In the multiple comparison test (Multiple comparisons of mean ranks for all groups) it was confirmed that the mentioned statistically significant difference did not manifest itself in the case of comparing the evaluation of respondents in micro-stories number 3 and number 4.

The results of the original descriptive analysis were thus confirmed. The fact that the addressed educators adequately assess the rising level and form of aggression from passive resistance, through verbal attack to physical attack can be considered a serious finding, but they do not distinguish between less controllable aggression associated with higher levels of affect and planned, mainly cognition-based aggression. It can be concluded that the respondents in the conflict primarily focus on the possibility of violating their own integrity, but much less on the causes of aggressive expression of the child and thus the level of his social deviation.

This suggests the possibility that respondents are not more interested in detecting the cause of the phenomenon, but rather to choose an immediate "solution" and quickly "get rid" of the problem. It is also possible that the personality setting of a child with aggressive expression does not represent a relevant basis for the addressed educators to create a more sophisticated pedagogical intervention in the short and long term (in detail see Svoboda, Smolík & Pérezová, 2020).

As part of the evaluation of the second group, we came to identical results based on statistical processing. We consider the fact that the respondents did not actually respond to the presented recurrence of aggression by children to be a remarkably interesting finding. They did not approach the solution of a conflict (crisis) situation as a solution to a recurring manifestation but evaluated it essentially as a series of unique and independent manifestations, occurring only in the monitored space and at a certain time.

Respondents also practically did not work with the assumption that the child's expression in behavior strengthens and that repeated behavior is an important diagnostic indicator and starting point for the choice of functional strategies of pedagogical intervention. We can thus rightly assume that in real practice, educators within the intervention target primarily the level of situational experience, not the long-term and targeted strengthening of the child's positive expression towards the fixation and generalization level.

An equally interesting finding was the denial of the possibility of more serious repeated aggressive expression of the child by ten respondents (in the case of reactions to micro-stories No. 3 and No. 4), which was expressed by the statements "this cannot happen" or "children would not allow it".

At the level of interpretation, in our opinion, the causes of these results can be seen in the following possibilities:

1. Addressed educators are convinced of the correctness of their procedure and thus do not need to apply more demanding and sophisticated pedagogical strategies. It is enough that, from their point of view, the child's behavior was "resolved" or "punished" for the given moment. Such an approach can be attributed to the relatively serious ignorance and unpreparedness of the educator.

2. Respondents, on the other hand, are unsure of their work performance and used a "he-mannish" proclamation so as not to question their competence. In clinical practice, such an approach can often be encountered. According to some educators, education is only a "force" matter and in a possible conflict situation, in their opinion, the stronger one wins. Such an attitude in some cases results in a physical confrontation with the child. In worse cases, moreover, it is not a punishment, but the intervention takes the form of revenge for insult and questioning the authority of the educator.

3. Educators respond in the spirit of the doctrine that applies in the facility and such an answer is expected of them. They are thus in the tow of the system, and if someone does not successfully question the doctrine, in time they will fall into the previous two categories, leave, or in rare cases, socially strong personalities will begin to pave their own pedagogical path.

4. Professional management with its pedagogical expertise did not exceed the level of prison activities. The management set the paradigms of the basic starting points, goals of the institution, tasks, methods, and the output profile of a child with a serious social deviation, not very pedagogically. The reason may be the low expertise of the key actors in the institution.
Note also that some facilities working with children with severe social deviation are pedagogically groping and tend to dwell on the position and person of the psychologist. According to them, the problems are caused by the absence of this position in the institution. This is

a quite common excuse for management unprofessionalism. It is also an incorrect request towards psychologists.

If the psychologist does not have a specialization in the field of educational psychology, has no pedagogical experience, or has no etopedic education, the events and strategies of pedagogical dynamics and pedagogical design in the educational institution are outside his professional scope. In this way, we do not lessen the need to use the personality of a psychologist in educational facilities for the performance of the compulsory institutional education. However, if institutions do not know what and how they want to achieve pedagogically, the presence of the position of psychologist does not represent a solution to this problem.

3.2 Findings and interpretation from the area of structuring (systemicity) of pedagogical intervention in case of aggressive manifestation of a child – "vertical level"

The content analysis of the respondents' free answers was focused on what procedure (method) the educators would choose for solving the presented situations with repeated aggressive manifestation of the child. Responses were categorized according to a raster created on the basis of starting points and procedures used in cognitive behavioral therapy. These were the following categories:

1. **Definition of barriers** – reactions leading to the cessation of the child's aggressive expression, application of rules, or the use of sanctions.
2. **Social assistance** – in a figurative sense, it is the support of the child, leading to the encompassment i.e., not to repeat the situation, to have no motive for it, or to be able to replace the inappropriate strategy in the behavior by more appropriate strategies.
3. **Social control** – verifying that both parties, but especially the child follow the rules of the game and the child is also given more attention, at the same time the educator also focuses on strengthening the relationship through increased attention focused on the child.

The answers of the respondents were analyzed in terms of content and their elements were assigned to the categories defined above. Ergo, whether the repertoire of pedagogical strategies of the respondents overlaps with all three categories, possibly with which yes and with which no.

At the level of descriptive analysis, it turned out that in terms of frequency, respondents would primarily use elements of social assistance in solving the situation declared in micro-story No. 1. (passive aggression of the child). For the remaining micro-stories number 2, 3 and 4, primarily the elements of the definition of barriers. Based on the content analysis of the respondents' answers, the elements of the use of social control were identified in only five cases out of 203. Due to such a minimum incidence, this category was not included in the statistical evaluation.

When applying the test of good agreement – chi quadrate, no statistically significant relationship was demonstrated between micro-stories and selected categories. Respondents choose strategies as if randomly, and the selection key for the combination of strategies (categories) is no longer, as in the previous part of the empirical probe (one-time aggressive expression), increasing aggression in the child's behavior.

Respondents thus clearly preferred the use of procedures at the level of defining barriers in micro-stories, where the child's active aggression (verbal or physical) manifested itself. They used social assistance at random, according to their subjective impression, the mapping of which was beyond the scope of the probe. If the child's negative manifestation disappears, the educators usually do not try to return to him again and do not show interest in the cause. They

are not interested in the diagnostic dimension of repetition and the likely strengthening of the strategies used by the child. They even do not formulate procedures that would have the character of the basis of a strategic plan for the long-term development of the child's personality. Let us remind you that one of the goals of pedagogical work in the environment of educational institutions should be to change the child's personality, leading to the correction of a serious social deviation and greater consolidation of the changes so that their impact consequently has an effect on the child's behavior outside the institution.

The repertoire of strategies declared by educators has almost completely lost the element of verification, which is essential for assessing whether their pedagogical intervention has been successful in dealing with the child's repeated aggressive behavior. If the educator finds out that the manifestation is repeated, he should redefine the barriers (rules, standards), offer different or modified social assistance and re-verify (check).

Based on the findings in this area, it is again reasonable to express doubts whether educators are sufficiently prepared for a deeper influence on the child's personality and not only for a directive behavioral smoothing of his external negative manifestation, without ambition to achieve changes in personality. In terms of applying the principle of social control, the respondents basically stated that they do not verify the impact of the applied strategy. They are not interested. Or they do not admit that their intervention would not have the expected effect. The described impression is obtained, for example, on the basis of non-implementation of continuous diagnostics, inadequate evaluation of the child's external manifestation and also in the case of dysfunctional setting of pedagogical goals.

For the sake of correctness, let us add that the findings do not exclude the possibility that with other categories, such as the use of elements of social assistance and social control, someone else than the educator works in a particular educational institution. The educator only performs the required steps on a specific level. In the case of using social assistance strategies, one can imagine the activity of a special pedagogue (ethopedist) or psychologist. However, we must consider whether the simple implementation of "instructions" is the right way and whether the portfolio of pedagogical practices of the educator is not significantly reduced.

However, the count of children in the monitored facilities and the capacity of the two above-mentioned experts (etoped and psychologist) also speak against the unrealistic nature of this assumption. They can definitely be routinely involved in dealing with the relatively serious recurrent aggressive manifestations of the child, and the provision of social assistance can take the form of "attending" individual or group intervention. However, in such a case, the educator is left behind and deprived of building a relationship on the basis of a "joint solution to the problem" with the child.

3.3 Findings and interpretations in the field of evaluation of the degree of directivity of proposed pedagogical interventions – "horizontal level"

To evaluate the degree of directive within the interventions proposed by educators to solve the presented situations (micro-stories), we have prepared an evaluation table with an overview of five-point scaling of the degree of directivity in relation to individual categories of approach (see above).

Chart No. 1 – Evaluation of the degree of directivity of proposed pedagogical interventions (categories and levels)

Category	1	2	3	4	5
Definition of barriers	*Strict ban* ("you must not" – a real punishment – longer‑term, *more pronounced)*	*Milder ban* (one – time ban; revocable)	*Charge+ threat of punishment,* if the misconduct is repeated	*Strong and strict warning* (verbal only, no real punishment)	*Arrangement* („You don't have to", „you shouldn't")
Social assistance	*Action* (the educator determines the method of help – strictly)	*Mild action* (the educator suggests more options for help, the child chooses)	*Mutual discussion* to find a concrete form of assistance	*Accompanying – stricter* (the child suggests help options; the educator chooses from them)	*Accompanying* (the child determines the method of help)
Social control	Check every day	Check several times a week	Check once a week	Check once every two weeks	Unspecified control

Source: own processing

At the level of the results of the descriptive analysis, the answers of the respondents differed slightly, but more accurate results were provided only by statistical data processing. Using the Shapiro-Wilk (Shapiro & Wilk, 1965) normality test it was determined that the data came from a non-normal distribution. The use of the Kruskal-Wallis test indicated a statistically significantly different value in the case of one of the medians, which was identified through the use of the Multiple Comparison Test (Multiple comparisons of mean ranks for all groups).

The results of the statistical evaluation showed that the respondents, in the case of repeated child aggression in micro-stories No. 1 and No. 2, proposed strategies showing the second level of directivity. We have defined this as the so-called "milder ban". Specifically, these were, for example, a ban on a popular activity, a one-off ban, or a revocable ban. In the case of affectively induced and planned physical aggression (micro-stories No. 3 and No. 4), the respondents proposed interventions containing the most directive possible approach (the first level of the degree of directivity).

This result is particularly interesting in the context of the finding that educators (in the case of more severe repeated aggressive behavior of the child) did not essentially propose interventions containing elements of social assistance and social control. It can be assumed that educators clearly perceive the repeated aggressive manifestation of the child as an excess, which must be addressed clearly and by mightiness.

4. Summary and conclusion

We can state that educators in their reactions to the assessed repeated conflict situations (micro-stories) perceive their growing severity, but without a significant systemic intervention link at the level of creating pedagogical strategies. In the case of solving repeated physical aggression towards the educator, the respondents do not primarily consider its source, form, or potential danger for future interactions. More likely, they perceive a specific immediate personal threat to the educator and a threat to his role (formal authority).

We can thus assume that the severity is judged by the potential harm and social seriousness, not by the nature of the problem and its pedagogical or psychological dimension. This ap-

proach is functional for stopping the spread of negative manifestation in the child's behavior, but practically dysfunctional for setting other targeted systemic steps towards a more sophisticated pedagogical intervention leading to a change in the personality of a child with severe social deviation.

When analyzing the data in the horizontal and vertical level, it was shown that if the described manifestation of the child was associated with repeated physical aggression, educators chose the most directive methods of intervention based on the definition of barriers. The use of social control mechanisms was completely absent. Social assistance was used only in isolated cases and suddenly rather than systematically.

In more serious cases of repeated aggression (micro-stories No. 3 and No. 4), the basic proposed intervention strategy for pressure from the child was even higher back pressure from the educator. The strategy applied towards the child is therefore usually very directive, without obvious professional insight, intuitive or experiential (recommendations of older colleagues, internal rules of the institution, trial, and error method) and rather stereotyped. Less serious repeated aggressive manifestations of the child (micro-stories No. 1 and No. 2) provoke the response of educators at the level of "milder ban".

Overall, the proposals for intervention in the intentions of the directive-authoritarian approach clearly prevailed. The reason can be found in the pedagogue's feeling that the integrity of his person, his authority, but also the system and the Order are threatened (in general, for example, the rules of the institution or social norms). This legitimizes the need to adopt quick solutions leading to the elimination of the immediate threat.

Here we perceive a weak point of the interventions proposed by the respondents. If there is a strict definition of boundaries and the use of procedures with the maximum degree of directivity, the qualitative relationship between educator and child can be changed. It can disappear, lead to open hostility and, paradoxically, to further repetition of aggressive manifestation by the child. On the other hand, it can also be positively influenced, but only if the child perceives the educator´s action as adequate and fair. The child must also be reassured that the educator unequivocally rejects his inappropriate behavioral strategies, but does not reject the child as such, does not reject his personality. At least without this, completely basic form of social assistance, the application of directive strategies will lead to the escalation of the conflict and the use of force by both sides of the conflict. There will be no space for targeted, systemic, intentional pedagogical intervention, which we have been promoting for a long time (Smolík & Svoboda, 2012 or Smolík, 2016).

It should be added that we also accept the possibility that some respondents are potentially able in the educational reality to use (and perhaps even use) not only the strict definition of barriers, but also the mechanisms of social assistance or social control. However, they are not professionally trained enough to reflect on them (at least not according to the key presented by us). In such a case, the educator can certainly succeed relatively in practice, however, the potential for the development of functional pedagogical interventions within facilities working with children with severe social deviation is significantly reduced. It is difficult to generalize or even professionally pass on examples of successful interventions to colleagues within the facility.

Even on the basis of our previously implemented research activities (Smolík & Svoboda, 2012; Smolík, 2016) we perceive the indicated problem as a systemic. The purpose of our report is to draw attention to the limits in the implementation practice of facilities working with children with severe social deviation and use them as a starting point for solving the unsatisfactory situation through further education and professional development of their pedagogical staff.

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Analysis of social support in pupils from different socio-cultural background as starting point for primary school teacher

Analýza sociální opory u žáků z odlišného sociokulturního prostředí jako východisko činnosti učitele základní školy

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Abstract:

The paper is thematically focused on the issue of social support for students from different socio-cultural backgrounds as a starting point for the activities of a pedagogical worker. The concept of social support is a key and integrating function in works devoted to the social context of health, illness and individual coping. However, it can also perform a similar function in pedagogical, school and counseling practice, as everywhere it relies on thoughtful help for children and adolescents, on guiding people to self-regulation. The data of the research survey were obtained through the Czech standardization of the Child and Adolescent Social Support Scale CASSS-CZ questionnaire (Malecki & Demaray, 2005), for pupils at risk of social exclusion. The article reflects key aspects related to this research.

Key words:

Further education of pedagogical staff, professional development, social support, different sociocultural environment, ANOVA.

1. Introduction and theoretical starting points

Social support was one of the first factors already identified in research as moderating the effect of adverse life events on a person's psychological well-being and health (Malecki & Demaray, 2005). However, it must be pointed out here that full agreement within the scientific literature is not only in the conception of the social support structure itself, but also in the understanding of the nature of its effect.

Social support can therefore be defined as information leading an individual to believe that he or she is being cared for (Mareš, 2001). However, in the broad sense of the term, social support is assistance provided by others to a person who is in a stressful situation and whose distress is in some way relieved (Křivohlavý, 2003). However, we can also define social support as help or support that one uses in such situations when one deems it necessary (Krpoun, 2012). Social support is a relationship support in the environment in which a person lives (Hartl & Hartlová, 2010). In the overall context, it is a social resource perceived by the individual as available in support social groups (Gottlieb & Bergen, 2009). It is therefore aid that is provided by other people to a given person in a stressful situation (Křivohlavý, 1999). Let us add that in our text we are dealing with help that can be provided by someone in the family (parents, siblings, relatives), someone close (friends, neighbours, classmates) or professionals (teachers, social workers). It can be material or non-material (emotional, cognitive) help.

Social support is also sometimes defined as satisfying a person's basic social needs through social interaction (Mareš, 2001). For the purposes of this contribution, within the consensus discussed, there is an apt definition, based on the model of social support (Tardy, 1985). The CASSS (Child and Adolescent Social Support Scale) questionnaire that we used for our research investigation is based on this model. Social support in this concept is defined as an individual's perceived overall support or specific supportive behaviour. It is thus the support available or already provided by other people who are part of the individual's personal social network and improve its functioning (boosting performance) or, on the contrary, dampen the negative influences to which the individual is exposed. This overall support or specific supportive behaviour is therefore broadly defined and includes emotional, instrumental, information and evaluation support (Malecki & Demaray, 2002; Mareš & Ježek, 2005).

Although most authors regard social support as a multidimensional concept (Křivohlavý, 1999; Mareš, 2001; Feeney & Collins, 2015), they highlight only some aspects of it at different levels of their definitions. Essentially, there are three basic theoretical approaches to examining social support distinguished in practice. The first area of theory explains social support from the perspective of districts and burden management. In contrast, the second group focuses and accentuates the influence of a social constructivist perspective, and the third then reflects the perspectives of social relationships (Lakey & Cohen, 2000, p. 29).

The social support from the perspective of distress and coping focuses on observable suppressive behaviour of support providers, making it easier for individuals in distress to manage the burden using appropriate strategies. For example, the frequency and quality of the support provided are examined. Subjective perception and assessment of the experienced distress by the social support beneficiary (the beneficiary evaluates the severity of the distress, the level of threat and his or her coping capacity).

The second approach relies on social constructivism. In the field of social cognition (one of the manifestations of social constructivism), it is important how the recipient perceives and assesses the quality and accessibility of the social support provided. This is why studies and research look at how social networks and social interactions affect recipients and providers of social support. In the third case, the social support is examined from the perspective of social relations. Social support is seen here as a specific part of broader processes that take place within social relationships. It must be said that of the various ways we understand the social environment are strongly intertwined, and so the study of social support cannot be separated from closely related concepts such as society, conflict, intimacy, attachment and social skills. Thus, the research focuses on dispositions that influence interpersonal behaviour (for example, social competence, empathy, attachment), people's needs, or both positive and negative relationships between people (Mareš, 2001). Social support can fulfil several different functions. These can also be distinguished terminologically, giving us different types of social support. The following functions of support are usually reported: emotional, instrumental, informational, provided by the community, validation (Mareš & Ježek, 2005).

In our view, the situation of children and families living in socially excluded locations cannot be effectively addressed by non-systemic interventions. The problem with the current form of intervention in this environment is precisely its fragmentation and the focus on only one partial cause or a few causes of the adverse situation (Svoboda & Morvayová, 2010).

In the context of the above considerations, we deem it crucial to seek in the discourse of this article a relationship in terms of interventions aimed at strengthening a child's school achievement and their ability to motivate the choices of socially positive or at least acceptable life strategies within the social framework. It is absolutely crucial, from our point of view, to direct research activities to primary school teachers and, above all, to analyse their com-

petence in the ability to identify the sources of school failure and the possible occurrence of educational problems in children from socially excluded localities. Furthermore, the ability to design adequate mechanisms for pedagogical intervention in prevention and support. Last but not least, identify any relationship between attributed ethnicity and the choice of methods and means of socio-pedagogical intervention. In this respect, we are especially highlighting changes in the pregraduate training and further education of educators, aimed at strengthening their competences to deliver inclusive education.

Hand in hand with increasing the competence of teaching staff, other interested groups of experts, in particular social workers, need to be educated and trained more professionally. Last but not least, it is important to focus on improving the education of teaching assistants working with these children, establishing clear standards of their work with comprehensive supporting methodological material. At the same time, the competence of teaching staff needs to be created, aiming for effective cooperation between teacher and assistant. The sources of social support are therefore an important issue in identifying both the difficulties and the potential emergence of risky behaviour by pupils from an environment of social exclusion.

2. Methodological background and results of the investigation

In the context of the research investigation, a standardised questionnaire 'Child and Adolescent Social Support Scale CASSS-CZ' (Malecki & Demaray, 2005), was used to identify perceived social support in children and adolescents. The CASSS-CZ original version has 60 items that are structured into five sub-scales of 12 items. Individual subscales bear a label: parent, teacher, classmate, friend, school. Each item subsequently takes the form of a statement about one of the four types of perceived support (emotional, instrumental, informational and support by assessment, evaluation).

The respondent is asked to carefully read each opinion and assess its content from two perspectives. The first is the area of how often he experiences such support. The second is the importance or significance of perceived support. The frequency of social support is assessed on a six-step scale from 1 (never) to 6 (always). The importance (significance) of the perceived support is assessed on a three-step scale from 1 (not important) to 3 (very important). The total score for one subrange of the questionnaire, one diagnosed variable (for example, a parent variable), is obtained by summing the pupil-indicated values for 12 sub-items. We add values separately for the frequency of the perceived foothold and especially for the importance of the perceived foothold. This gives us aggregate data for each of the five variables studied. By adding up the data for these five variables, we then get the total pupil-perceived social support.

We carried out the research intent on a sample of 61 second grade pupils at risk of social exclusion, of which 31 were girls (51 %) and 30 were boys (49 %). The pupils were familiar with the tests and completed the test voluntarily. The testing was completely anonymous and only the sex of the pupil was distinguished. As a recommendation for similar further research of this type, it would seem appropriate to focus primarily on social support in terms of age of respondents or gender. However, those variables were not the subject of this contribution.

In our view, focusing on the social underpinning of research is less common, but still deserves the utmost attention, for results and continuously published surveys in professional periodicals can make a substantial contribution to adequately supporting strategies in pupils from different socio-cultural backgrounds. Indeed, it must be stressed that people living in socially excluded locations are choosing short-term life strategies, aimed at meeting basic needs. Within these communities, a set of rules and values emerge that are far from the value system of a majority society. Children who grow up in these locations automatically adopt those models of behavior. It is therefore clear that the specific actions of socially excluded people

are the result of their adaptation to specific living conditions (Svoboda & Morvayová, 2010). This in turn significantly influences the choice of strategies for social pedagogical intervention and social support overall.

In our research investigation, we looked only at the incidence rate of perceived support in a select group of respondents. The range of possible values for one respondent ranges from 12-72 in each subrange. Arithmetic averages were thus calculated from the following scores, where: SO = arithmetic mean of the result of the gross social support score for second-grade pupils from a different sociocultural background, S = social support for second-grade pupils from a different sociocultural background, ROD = parent scale, UČ = teacher scale, SP = classmate scale, KM = friend scale, SC = school, SD = standard deviation.

Multiple data comparisons within the Pearson correlation coefficient and ANOVA variance analysis were performed using Microsoft Excel and Statgraphics Centurion XVI.II software at a significance level of $\alpha = 0.05$. Of the ANOVA-test calculations, we were particularly interested in the value of test criterion F and the value of the observed level of significance P. In case P was less than 0.05, we subjected the data to post-hoc analysis. In statistical analysis, we chose specific methods according to the type and distribution of data. The data was first tested by the Shapiro-Wilk Normality Test (Shapiro&Wilk, 1965). For comparison within each observed sub-tests, we further used the Mann-Whitney U-Test, which is designed to compare two independent groups (Mann&Whitney, 1947). Subsequently, we found a statistically significant difference between which groups from a post-hoc analysis based on the Dunn method (Dunn, 1964).

Depending on the ANOVA variance analysis measurement, we found two baselines. F was 12.07 and P was 0.00, less than 0.05. Therefore, the variances observed are not identical between the compressed files. Interval Chart 1 presents a demonstration of the entire situation, with $SO_{ROD} = 49{,}262$, $SD_{ROD} = 12{,}505$, $SO_{UČ} = 47{,}836$, $SD_{UČ} = 11{,}662$, $SO_{SP} = 46{,}180$, $SD_{SP} = 14{,}808$, $SO_{KM} = 55{,}557$, $SD_{KM} = 11{,}372$, $SO_{ŠK} = 39{,}787$, $SD_{ŠK} = 13{,}787$, $TOT = 47{,}725$, $SD_{TOT} = 13{,}671$.

Figure 1: Interval chart of results based on total gross scores in each subrange of interest for pupils from different socio-cultural backgrounds
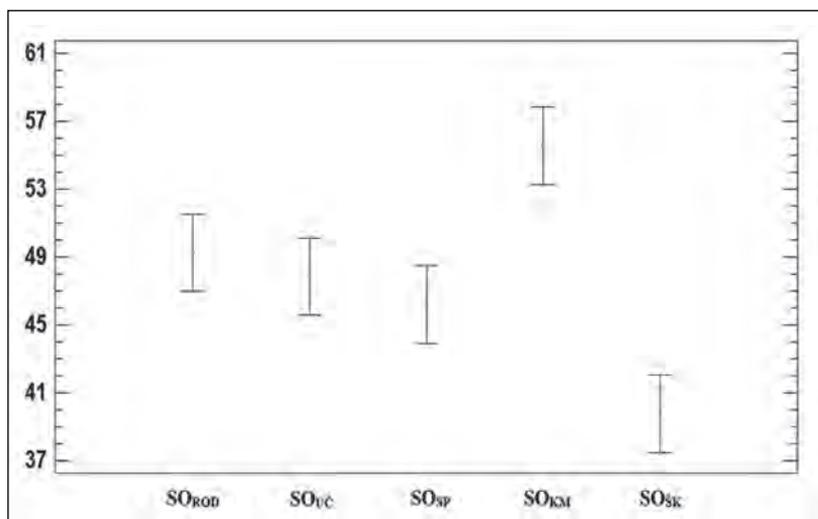
(SO = arithmetic mean result of gross social support score for second grade pupils from a different sociocultural background, ROD = parent scale, UČ = teacher scale, SP = classmate scale, KM = friend scale, ŠK = school)

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The observed post hoc analysis values of all results, depending on the total gross scores in the individual subscales of interest for pupils from different socio-cultural backgrounds, are shown in Table I. In particular, the bold highlighted numbers in the table above identify between which test areas there are statistically significant differences at the 5 per cent level of significance. Compared to the findings in this group of research investigations, statistically significant differences were found, particularly in the friend and school subrange.

Tab. 1: Post hoc analysis of all results found, depending on the total gross scores in the individual sub-scales studied, for pupils from different socio-cultural backgrounds

------------	SO_{ROD}	$SO_{UČ}$	SO_{SP}	SO_{KM}	$SO_{ŠK}$
SO_{ROD}	------------	$P_t = 0,42$	$P_t = 0,14$	**$P_t = 0,00$**	**$P_t = 0,00$**
$SO_{UČ}$		------------	$P_t = 0,25$	**$P_t = 0,00$**	**$P_t = 0,00$**
SO_{SP}			------------	**$P_t = 0,00$**	**$P_t = 0,03$**
SO_{KM}				------------	**$P_t = 0,00$**
$SO_{ŠK}$					------------

(SO = arithmetic mean result of gross social support score for second grade pupils from a different sociocultural background, ROD = parent scale, UČ = teacher scale, SP = classmate scale, KM = friend scale, ŠK = school)

Another investigation and area of our concern has become the correlation between subscales between pupils from different socio-cultural backgrounds (Table 2). Of this comparison, it is worth noting the high correlation between the subscale of the social support of school-learning and parent-learning. However, for children from socially excluded localities, and hence the issue of social support, the process of achieving school success (and thus secondary success in wider society) cannot be significantly influenced by a subtle change in one of the underlying factors that contribute to their (often lifelong) disadvantage.

All these social support items can, in our view, be influenced at the same time, with the help of institutionalised education in school. Its socially responsible function is unarguable here. It can equip children with severe social disadvantages towards ongoing full-fledged social participation. However, it should be noted at this point that the results of the research investigation point to the lowest perceived social support precisely from the school for pupils at the second level of primary school from different socio-cultural backgrounds.

Tab. 2: Intercorrelation in individual subscales of interest for pupils from different socio-cultural backgrounds

scale	S_{ROD}	$S_{UČ}$	S_{SP}	S_{KM}	$S_{ŠK}$
S_{ROD}	------------	0,565	0,337	0,294	0,350
$S_{UČ}$		------------	0,110	0,073	0,592
S_{SP}			------------	0,457	0,358
S_{KM}				------------	0,087
$S_{ŠK}$					------------

(S = social support in second grade pupils from a different socio-cultural background, ROD = parent scale, UČ = teacher scale, SP = classmate scale, KM = friend scale, ŠK = school)

We believe that the results presented by us are not surprising. They show the determinant and repeatedly accentuating influence of the triad of school-parent-learning areas. And here the focus of efforts that significantly influence the choices of strategies for social pedagogical intervention and social support overall must be sought. But in this respect, families living in socially excluded locations cannot successfully help their children acquire the necessary skills and pass on the skills to help them develop adaptive strategies that are in line with both their interests and those of society, given their low level of education and their different situational context.

Parents themselves often do not know what strategies are important and necessary for success in society. In such a constellation, it is not only desirable but also essential that educational institutions, in particular schools and teaching staff, intervene systematically and in the long term for the benefit of children. At this juncture, we must once again accentuate, above all, the changes in training and further education of teachers, aimed at strengthening their competences to deliver inclusive education. It is necessary to overcome the notion of the teaching profession as a craft activity and move towards a model of broad professionalism built on the notion of the personality of the teacher as an expert in education (Dytrtová & Krhutová, 2009).

Teachers should not only be interested in what they teach, but also how they teach and especially who they teach, which is a newly declared domain. The professional personality of the teacher is the result of his own efforts to become a teacher, while it is also formed during the preparation for the teaching profession and during the course of gaining pedagogical experience. It is therefore not only pregradual but also postgraduate training that is important for creating a teacher's personality (Tirpák, 2019). A qualified teacher becomes a member of the teaching profession. A qualified teacher possesses professional knowledge relating in particular to: the changing social and cultural context of education, current approaches to teaching and learning reflecting the results of up-to-date research, school curriculum and its creation, pupil personality and potentiality of development, principles and practice of social justice, inclusion, equity and democracy in education, self-reflection, development of disciplines relevant to the subjects taught.

From a pedagogical point of view, it is a set of educational requirements, encompassing substantial knowledge, skills and competences universally applicable in normal work and life situations (Veteška & Tureckiová, 2020). But they can also be conceived as an expanded concept of key qualifications. However, the relationship between the concepts of qualification and competence is not uniformly defined in the literature. Generally speaking, competences are most often expressed in the context of managing work situations and tasks by the knowledge, skills, traits, attitudes, skills and experience of a particular worker. To be competent, then, is to be able. By contrast, the concept of qualifications refers to a set of competencies required to qualify for a specific activity, namely a person's relationship with work.

The qualification then corresponds or does not correspond to the qualification requirements of the particular post. Qualification can therefore be understood as a set of competences and the two concepts can be distinguished. It is true that, as a general rule, a qualification may be perceived as a set of certain personal prerequisites and characteristics which determine, from an external point of view, the personality of a worker to perform a particular job. However, it cannot be viewed as the formal attainment of a certain degree of education. A worker's real qualifications are shaped and deepened not only continuously with his work experience, but also with the acquisition of professional and personality skills.

From the point of view of this reasoning, we therefore understand competence as an open classification that is variable within the diversity of educational realities, thus accentuating the

complexity and dynamics of the educational phenomena and pedagogical situations that a tutor faces in foster care facilities as part of his educational practice. This implies the need for teaching staff to continuously develop their competencies in general terms, such as continually completing their studies, monitoring the development of scientific knowledge and reflecting any shift in the paradigms of their field (Veteška & Tureckiová, 2020).

The issue of competence is therefore still a topical issue. In our conception, we understand competence as a predefined set of performance criteria, that is, measures or standards of expected performance in terms of activity outcome and behaviour. Capabilities (particularly intelligence), knowledge, skills, motivation and relevant behaviour and actions (Veteška & Tureckiová, 2020) are the determining factor. More recently, the view has grown that it is necessary to define teacher quality as a standard which, based on the structure of professional activities, establishes the key competences needed for the quality of the profession (Syslová, 2013). However, the fundamental problem remains that competence manifests itself in behaviour or activity, and that no individual possesses all the necessary competences (Veteška & Tureckiová, 2008).

Unfortunately, in terms of the results of the research investigation and in relation to the incidence and frequency of the perceived social support, the school (people in school) is rated by the respondents to the research investigation as the lowest of all the subscales studied. The conflict between home and school practices is therefore the rule, rather than the exception, for children from socially excluded localities. According to our investigations (Svoboda & Morvay, 2010), children are generally accepted by families regardless of their school benefits. Failure at school is completely normal and is not particularly reflected in the final assessment by the important adults (parents). On the contrary, significant school success or activity towards school requirements can also be a reason for not being accepted in a peer group. That's why children prefer family standards over school ones in the first place. In this research, the inclination of these children towards the social support of their mates, which they perceive to be the most significant in terms of frequency, is also clearly visible.

Discussion and conclusion

The contribution is thematically focused on the issue of social support for pupils from different socio-cultural backgrounds as a starting point for the teaching staff. The roots of school failure for children living in a different socio-cultural environment cannot be found only in parents' access to education. The main determinant is the different mechanisms of socialisation and acculturation in this specific environment (Svoboda & Morvay, 2010). The subsequent perception of the value of education as highly questionable is thus, from the point of view of the inhabitants of socially excluded sites, the logical consequence of this.

Social support takes many forms and functions. In summary, if the social support is to be effective, it should be provided in such a way and form that recognises the feelings and needs of the beneficiary, protects their self-esteem, expresses generous intentions and acceptance, in a way that respects the autonomy and self-determination of the beneficiary of the support, and that promotes confidence and intrinsic motivation. As we mentioned above, effective social support responds to people's needs and goals. This pursuit of objectives not only improves the functioning of the one in society, but also protects it from the adverse phenomena that occur in society (Malecki & Demaray, 2002).

Individuals' needs and goals change over time, and so do the form (type of support) and sources of social support (type of relationships). The main sources of social support include natural support systems, assisting professions, support and self-help groups (Baštecká et al., 2005). Furthermore, the main sources of social support can include a teacher who can serve as

a mentor in helping individuals maintain well-being, develop strong value systems, life goals and keep life paths open to support and facilitate the realisation of their aspirations (Bundick & Tirri, 2014 and Heng et al., 2020). These close relationships support individuals not only in their ability to cope with stress, but also in their efforts to learn, grow, achieve goals or find meaning in life (Feeney & Collins, 2015).

In adolescence, the most important sources of support are family, peers (friends, classmates) and teachers (tutors). They are the kind of people to whom an adolescent has a relatively stable and close relationship. It follows that the school environment is an important factor for adolescents, given that the school environment is made up of the abovementioned supports. For adolescents who specifically perceive higher levels of support and social support for teachers and students, several studies confirm that approach to education is positively affected in these adolescents (cf. Saleh et al., 2019 and Horanicova et al., 2020).

The contribution is thematically focused on the issue of social support for second grade pupils from a different socio-cultural background as a starting point for the teaching staff. Social support is a key and integrative function in teaching, school and counselling practice, as in all these areas it is built on thoughtful help for children and adolescents, on guiding people to self-regulation. The research survey data was obtained through the Czech standardisation of the Child and Adolescent Social Support Scale CASSS-CZ (Malecki & Demaray, 2005). In terms of results of cross-correlation between subscales for pupils from different socio-cultural backgrounds, it is worth noting the high correlation of the school-learning and parent-learning social support subscales.

In terms of the actual results of the research investigation and in relation to the incidence and frequency of the perceived social support, the school (people in school) is rated by the respondents to the research investigation as the lowest of all the subscales studied. It is in this regard that the focus of efforts that significantly influence the choices of strategies for social pedagogical intervention and social support overall must be sought. At this point, we need to reiterate the irreplaceable role of the teacher, who possesses a body of professional knowledge relating to the very social and cultural context of pupils from different socio-cultural backgrounds. High levels of social support in school can have a positive effect on pupils' adaptive and social skills, self-image, life satisfaction and problem (risk) behaviour in adolescents (Malecki & Demaray, 2003).

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Developement of adult's competencies by coaching

Rozvoj kompetencií dospelých koučovaním

Roland Pavlík

Abstract:

The case study is a processing of the first of the outputs of the author's dissertation entitled Coaching as a tool for the development of adult personality. In this paper, we present the comparison of data analysis of the initial Hogan personality inventory (questionnaire) and the results of the initial behavioral interview of the whole research sample. Qualitative research of the data emphasized the possibilities of applying the results to adult education by the coaching method.

Key words:

Adult education, coaching, personal development, managers, Hogan's personality inventory, behavioral interview.

Introduction

The research project realized within the author's dissertation is focused on coaching as one of the methods of adult education. Practice as reported by Hogan, R., Hogan, J. & Warrenfeltz, R. (2007) demonstrates the expansion of coaching into various spheres of human activity. Practice and foreign research both, according to Kaiser B. R. (2009) have revealed that coaching is an effective tool for development that works universally. According to Rosinski, P. (2009), coaching brings two benefits. Coaches can formulate and achieve their goals more effectively.

According to P. Jahn & L. Theodoulides (2013), reflective methods such as coaching, are recommended to be used in the learning process, which will provide individuals with the ability to independently analyze the situation and then decide on a suitable solution. Also according to Hogan, R., Hogan, J. & Warrenfeltz, R. (2007), the individual is able to look for developmental solutions using appropriately selected educational methods.

The research problem is the question of whether and at what measurable level the coaching tools leads to the development of adult personality competencies. One of the reasons why this needs to be explored is the significant expansion and increase in coaching offers does not coincide with similar growth dynamics in the research corpus to support coaching.

The aim was to find out the level of managerial potential of a research sample of 127 participants and to determine the level of self-assessment of the research sample in terms of the „optimal" personality profile of managers. In this work we used partial outputs of the first phase of combined research of applied character, according to Gavora, P. (2006) using a combination of qualitative and quantitative analysis.

1. Methodology of research

The defined research goal for the first phase was to determine the level of managerial potential of the research sample by measuring the level of personal competencies on the scales Adjustment, Ambition, Sociability, Interpersonal sensibility, Prudence, Inquisitive and Learning approach, objectively measured by questionnaire Hogan personal inventory (in short HPI) before coaching. Research questions related to this goal are:

- RQ1: What is the average level of individual competencies expressed in Hogan's personality inventory (questionnaire) on the scales Adjustment, Ambition, Sociability, Interpersonal sensitivity, Prudence, Inquisitive and Learning approach before coaching?
- RQ2: Which scale on Hogan's personality inventory has the highest and lowest results achieved on average in the research sample before coaching?
- RQ3: What is the average measured value of managerial potential in the research sample on a scale of 0-100% before coaching?

The participants are the employees of the clients of the HR consulting company Assessment Systems Slovakia, s.r.o., a licensed partner of Hogan Assessment Systems (USA). The research sample comes from various sectors of the economy and from all regions of Slovakia. We focused on two groups of employees: identified talents of companies, so-called „Talent pool", who are not yet employed in a leading position and managers acting in a leading position.

In the first phase, the research focused on the differences in the objectively measured results of their competencies´ level and the self-assessment in the examined competencies. Identified lack of competencies will be the subject of following coaching.

Hogan's psychodiagnostics – mapping the level of competencies

(Method of quantitative part of research)

Research and practice show, as stated by Smither, R. & Hogan, R. (2008), that personality profile is one of the best indicators of how people build relationships, approach work and education. Knowing the level of all these characteristics it is possible to predict future work performance through the expected behavior of the candidate. HPI is recognized by the professional public and regularly achieves leading positions in the rankings the evaluation of validity and reliability published by renowned professional institutions of psychologists, e.g. British Psychological Society.[3]

Hogan Assessment Systems has identified optimal managerial profile reported by Curphy, G. & Hogan, R. (2012) in values measured on HPI scales defining the required level of single competencies. In the first research part we used the optimal management profile as a standard to evaluate the level of participant´s competencies. The HPI contents 7 scales Adjustment, Ambition, Sociability, Interpersonal sensibility, Prudence, Inquisitive and Learning approach. The test contains the statements and the respondent express their agreement or disagreement on a 5-point scale.

Behavioral interview – BEI

(Method of qualitative part of research)

The behavioral interview is focused to obtaining evidence of the skills and characteristics necessary for a given job position. The distinguishing feature of a behaviorally conducted interview is the emphasis on describing an already experienced situation. The best predictor

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[3] https://ptc.bps.org.uk/tests-and-testing/psychological-tests

of future behavior is the past behavior. Behavioral interview method is structured form of interview to identify the level of the candidate in the monitored competencies.

The questions used in the BEI do not ask about feelings, knowledge, attitudes, but about behavior and specific action. According to Kaiser, B. R. (2009), this type of interview is based on the assumption that the questions force the candidate to create creative answers that either the supervisor or the coach wants to hear. In order to guarantee that we obtain true information during a behaviorally conducted interview, we can also use the so-called „proof by contrast" method, where we find out, for example, the competencies of teamwork and ask about individual work. The success rate of the behavioral interview method as reported by Absolon, J. (2006) is 61%.

The first phase of the research took place in the period May 2020 – September 2020. The research sample consisted of 127 respondents (71 men – 55.91% and 56 women – 44.09%), to whom Hogan personality inventory was distributed.

Results of Research

If we work with the 5-factor model of personality traits, (Neuroticism, Extroversion, Conscientiousness, Agreeableness, Openness to experience) HPI allows us to obtain a map of individual competency levels and by comparison with the competency model of the job position, to determine the needs of personality development through coaching. [4]According to Smékal, V. (2004), the above list of characteristics is increasingly considered to be the starting point for representative research.

The program of the coaching will be linked to the values measured on the mentioned HPI scales. The research question is, if the numerical values in the relevant scales after coaching will be closer to the desired level copying the requirements.

Quantitative analysis of Hogan personality inventory

By statistical evaluation we have obtained results of individuals and average results of the research sample. We compared the individual HPI results for each respondent with the optimal profile of the manager. The results show differences on the scales Interpersonal sensitivity (high) and Learning approach (high). In order to improve the managerial potential, we need to reduce in the research sample by targeted coaching: a) respondents' readiness to prefer the goals and needs of others and being reluctant to provide critical feedback and to reduce the effort of respondents to prefer theoretical knowledge at the expense of the application of practical knowledge.

Table 1 Statistic coefficients of the research sample HPI results

Scale	Adjustment	Ambition	Sociability	Interpersonal sensitivity	Prudence	Inquisitive	Learning Approach
arithmetic mean	54	55	63	68	56	45	80
median	58	44	62	76	52	47	94
standard deviation	29	28	19	27	22	23	24

Source: own processing source

Findings at the individual level allowed us to identify the strengths and developmental

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[4] Big Five Personality Factors; http://http-server.carleton.ca

needs of the respondent and evaluate his managerial potential. HPI results have demonstrated the managerial potential of the respondents as follows: in the low band 0% -34% there were 41 respondents = 32.28% of, in the middle band 35% -64% there were 53 respondents = 41.73 and in the high band 65% -100% there were 33 respondents = 25.98% of. The average managerial potential of the research sample was 53%.

Behavioral interview was focused on finding out the particular behavior of the respondent in the past in situations crucial for assessing the level of competencies examined which we could further classify and evaluate (qualitative evaluation). For behavioral questions, we used the „STAR" method: Situation, Task, Action, Result. We have focused to areas that affect the manager's performance – competences, professional competence and motivation. Davis,P. (1999) states that a person can deceive himself (and others) worse at the level of behavior than at the level of perception and attitudes. According to the findings of Kaufmann, J. C. (2010), by asking about additional circumstances, situations and specific behavior, we increased the probability of finding out the actual level of monitored competencies.

Quantitative analysis of behavioral interviews

Behavioral interviews with the entire research sample of 127 participants (71 men – 55.91% and 56 women – 44.09%) took place from June to September 2020. Previously, respondents did not know their results measured by Hogan's personality questionnaire. The interviews focused on the areas how the respondent evaluates the level of his competencies, what are the most significant problems of his career development, which are an obstacle to his development and what measures would help to improve his current situation.

The evaluation of the 1st research´s phase consists of the evaluation of the research sample HPI intended for and the comparison of the obtained during the behavioral interview. Subsequently, the findings from the quantitative and qualitative part of the 1st phase of research were compared with the secondary sources and professional literature in the field.

Table 2 Comparison of average results of the research sample from the HPI and self-assessment data from BEI in %

Scale	Adjustment	Ambition	Sociability	Interpersonal sensitivity	Prudence	Inquisitive	Learning Approach
HPI results	54	55	63	68	56	45	80
Self-assessment	63	64	79	77	71	49	91
Difference	+ 9	+9	+16	+9	+15	+4	+11

Source: own processing source

The comparison shows the prevailing tendency to give more weight to own real abilities and to overestimate the level of own individual competencies.

Discussion

Results from HPI on the group-level compared to the optimal managerial profile demonstrated differences in the research sample on the Interpersonal sensitivity (high) and Learning approach (high) scales. On the other scales Adjustment, Ambition, Sociability, Prudence and Inquisity, the results correspond with the desired values of the optimal management profile.

To increase their competencies, we need the respondents to reduce excessive Interpersonal Sensitivity and to balance the Learning Approach in order to minimize constant effort to prefer theoretical knowledge at the expense of the application of practical ones.

The self-assessment results obtained from the analysis of BEI show that the respondents' self-assessment on the Prudence scale is 15% higher compared to HPI results. It is a scale that represents important managerial competencies, such as: responsibility and reliability, planning and organization, etc. For the development by coaching it will be important to set individual goals to improve them, despite the fact that the average results of the research sample show the optimal level on the Prudence scale. The results measured in the high band of 65% -100% as stated by Bhaduri, A. (2013) endanger the manager with a reduced ability to react flexibly to seduced changes, meticulousness and excessive perfectionism.

Conclusion

The findings will be used in coaching for the entire research sample. We understand adult education and thus coaching as „a system of formative (preferably self-formative) that shapes and develops personality traits so that he can apply them in a happy and successful life and work in human society" (Pavlov, 2015, p. 14), so we can also talk about the context of using one's own potential and targeted strengthening. De Meuse, K. P., Dai, G., & Lee, R. J. (2009) describe key problems related to coaching efficiency assessment focusing to the need of psychometric quality of the coaching efficiency measuring tools.

After coaching finalized, we will repeat the testing with HPI and conduct a final interview. Their results we will than compare with the results of the research in the 1st phase. This will verify the research hypotheses in the final phase.

The limit is the fact that the respondents are employees of different sectors companies to whom their development was in some way „forced" by their employers, especially towards „Talent pools" who need to deliver better performance as stated by Simon, H. & von der Gathen, A. (2002). We assume that most of them are probably motivated respondents, but we also see a threat according to Gorell's findings. R. & Gilliana, J. (2015) that their motivation can only be external, not internal one.

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Global educational challenges as a starting point for andragogy counselling

Globální vzdělávací výzvy jako výchozí bod pro andragogické poradenství

Beata Kosová

Abstract:

The predicted future of jobs, the development of society and man within point to paradigmatic changes in future education of children and adults. The concept of education and teaching will change towards interdisciplinarity and transdisciplinarity; hence, also the nature of the teaching profession and professionalism. Andragogical counselling for teachers will have to aid transformation of formal education systems, prepare for new educational roles and professions, and develop teachers' transversal skills towards holistic development of their personalities.

Key words:

Aandragogy counselling, future of education, teaching profession, holistic approach, interdisciplinarity, transversal competences.

Introduction

For anyone who would like to act as an andragogy counsellor and advise others on how and for what they should be learning, it is essential to know how the future of professions is evolving and what trends it brings about in terms of goals, content and learning processes. Yet, in terms of counselling, teachers who are supposed to stir others towards these changes, it is also essential to perceive changes in the nature of the teaching profession, that largely bring changed roles of teachers in future learning, along with brand new educational professions that keep already emerging and require preparation on the part of teachers.

1. Starting points for the future of learning – global and demographic development

The World Economic Forum 2016 and 2018 Future of Jobs Reports offer key inspiration for learning in the future. Both are the result of extensive research among human resource officers: in 2015 (WEF, 2016) among 371 global employers with 13 million staff; in 2018 (WEF 2018) among 313 employers with 15 million staff. They are based on a new understanding of the enormous technological interconnectedness of all areas of economy through intelligent systems that will solve a range of problems.

According to the respondents, approximately 48 % of jobs and roles will be stable (though not unchanged) by 2022, 21 % will become superfluous and about 27 % of new ones will emerge, some of which will become crucial (WEF, 2018). Respondents across sectors agreed that the demand for jobs and roles will increase in three major areas:

1. Data analysts and scientists, specialists on major data, etc. will be imperative for all sectors; they are expected to be able *to understand and interpret data, and make decisions based on the data*, thus awarding meaning to the unprecedented flood of exponentially growing data we currently store in databases.

2. Professions that affect people and human abilities, such as human resources specialists, learning specialists, organisational development specialists, personnel, cultural and consulting specialists, service and solution personnel and designers, social media specialists, experts in innovation management, that are based on the *ability to present data, negotiate and convince, or the ability to teach or lead others*.

3. In 2018 brought an emphasis of the need for new specialised professions related to the *understanding and use of the latest technologies* such as artificial intelligence and specialists capable of mastering machines, software and application developers and analysts, process automation experts, digital transformation experts, specialists on the artificial intelligence utilisation, designers of interaction between humans and machines, database and network specialists, robotic engineers, etc.. (Ibid, pp. 8 – 9.)

Automation as the key emerging process in all professions is not explained as replacing humans with machines, but as a strategy to expand human potential, enabling freedom from routine tasks, thus widening the creation of values and the use of talent. Most automation applies to the level of work-related tasks, not at that of the jobs as a whole. By 2022, a quarter of the current jobs are expected to entail over 70 % of automated, human–technology collaborative tasks. (WEF, 2018, pp. 10–11)

Both reports critically suggest that most current learning systems provide lifeless education. They point out that the system of acquiring traditional formal qualifications focused on hard professional skills that train ready-made specialists in a single field, has become obsolete and hinders future progress. More than specialists, demand will arise for people capable of solving an area of problems, considering all related and emerging contexts. The authors suggest that the major barrier in learning systems lay is the dichotomy between the humanities and exact sciences, and between theory and practice. (WEF, 2016, p. 32). They call for inter-disciplinary-equipped personnel, though they do not emphasise pure factual knowledge, even in technical and IT fields, where data and theories will be primarily supplied by technologies. They instead accentuate a substantial share of **transversal (cross-disciplinary) competencies**. Yet, they do not consider these competencies to be a complement to a profession, but its foundation. They anticipate that the ability to comprehensively solve problems will be the foundation of 36 % of future professions, social skills of 19 %, critical thinking of 18 %, system assessment, decision-making and analysis of 17 %, and creativity and logical reasoning of 15 % professions. (*Ibid*., p. 22)

For 2022, the key competences envisaged include analytical and innovative thinking, and strategies of active learning and study. Despite the anticipated increase in the demand for expertise in new technologies, they are described as only a part of the equation, as they will not be required without human competencies such as creativity, originality and initiative, critical thinking, persuasion and negotiation or comprehensive problem solving. Compared to the present day, the report anticipates major rise in demand for emotional intelligence, leadership and social influence. (WEF, 2018, p. 12.) WEF thus estimates that, by 2022, at least 54 % of all personnel will require extensive reskilling and vocational training will need to change significantly. Nonetheless, it presupposes fundamental changes in educational systems and curricula at all levels of schools that are, in turn, determined by newly designed qualifications and retraining of members of the teaching profession.

Global trends and rapidly advancing technological progress now show, however, that **humans do not fully manage these trends**. On the one hand, life expectancy increases to 70 years or more. (Gapminder, 2020.) On the other hand, 70 % of all deaths are caused by diseases in which civilizational factors play a key role. (Ritchie, 2018) According to the World Health Organisation (WHO), in 2014, a total of 12.8 % of adults over the age of 18 worldwide were obese (BMI> 30), whilst in the United States and Europe they represented over a quarter of the population. In contrast, the share of malnourished population was only 10.7 %. 38.96 % of women and 38.34 % of men are overweight (BMI> 25). (Ritchie & Roser, 2019.) Thus, an increasing proportion of the global population has unhealthy lifestyle and nutrition, suffers from stress or a lack of physical activity.

Global data on mental health of the world's population are not encouraging either. The number of deaths from suicide in 2016 was 817,000, which is 200,000 more than the number of deaths from all forms of violence, murder, terrorism, conflict, and executions combined. (Ritchie, 2018) Statistically, man gradually becomes his worst enemy, which is a new and threatening situation. The failure to manage the dynamics of change or the inability to cope with one's life is also evidenced by the fact that 268 million people suffer from depression, 100 million from alcohol abuse and 62 million from drug addiction. (Ritchie & Roser, 2018) These are imperative reasons to changing learning systems, along with counselling towards transversal competences, necessary for the future professions, as well as for the holistic human development of an individual.

2. Transformation of theoretical basis of education and counselling

In this changed situation, andragogical counselling will have to be also based on the changed theoretical basis of philosophical and educational mind. Economic, philosophical and sociological reflections on the development of society point out that development is epitomised by increasing fragmentation and entropy, desocialisation and decontextualisation. This is manifested in education as the disintegration of holistic education into the acquisition of practical skills, such as the pragmatisation of school and the economisation of educational practice. (Porubský, 2012, pp. 43–57) The scenario of continuing fragmentation that relies on technical solutions is already being fulfilled dynamically. In its spirit, transhumanism offers the concept of improving one's abilities through technology, which will allow one to exceed one's own limits.

This entails, for instance, neurotechnologies to expand brain capacity and connectivity; superintelligence, uploading – linking artificial intelligence with humans; virtual reality, etc., which together will enable humans to be integrated with technologies as early as around 2030. (Klinec, 2014, pp. 12 – 16) There is talk of a new kind of "post-human" who will be a hybrid, spending most of his life in virtual reality, where he can live forever. Transhumanism desires to be an extension of humanism.

Paradoxically though, as Liessman argues, it is the most prominent manifestation of mechanistic thinking that desires to improve man according to the criteria of a good machine – to improve his lifespan, performance, memory capacity, separate spirit from body, and transfer it to chip, modified identities, provided they still are identities. He is critical about the fact that "man considers the randomness of birth and the uniqueness of being to be a disgrace […] and in the program he proposes for himself, he himself appears less and less […]." (Liessmann, 2011, pp. 7–8)

The second more complex scenario is not to increase fragmentation and individualism, but to achieve a **paradigmatic, holistic change in thinking and action**. The holistic principle presupposes a departure from positivist thinking that breaks down everything into individual-

ity to a systemic and synergistic tendency towards a certain level of wholeness. It emphasises that it is impossible to separate the theoretical from the practical, society from the individual, globally from the local, objective from the subjective, socialisation from personalisation, etc., that individually represent only part-answers and must be supplemented by their alleged contradictions.

Overcoming dualisms presupposes an in-depth justification of their complementarity, the development of a new holistically paradigm of academic mind in interdisciplinary synergy of all sciences. A challenging task arises for educational sciences and practice, including andragogy counselling: to introduce a new paradigm of thinking into all fields of social and economic practice through new concepts of education in order to develop a holistic personality and humane society.

Two strategies will play a crucial role on the path to holistic thinking: interdisciplinarity and transdisciplinarity, supported by the digitisation of the research and learning environment, which "is considered a transversal innovative strategy for the evolutionary transformation of universities as opposed to the current academic organisation by discipline" (Darbellay, 2015, p. 4) and thus also training for all educational professions. **Interdisciplinarity** can be characterised as the cooperation of two or more scientific disciplines by dynamically interacting with each other to allow complexity of object exploration (Darbellay, 2015), as an interaction that involves all activities that use, combine, integrate parts of two or more disciplines on empirical, methodological or theoretical level (Huutoniemi et al., 2010, p. 80), as well as the production of knowledge, research that transcends disciplinary boundaries (Bridle et al., 2013), where problems are solved by connecting perspectives.

A new field of knowledge emerges, one which cannot be assigned to any specific scientific discipline (e.g. diversity, migration, inclusion). It means not only expanding the interdisciplinary approach within andragogy and the design of interdisciplinary courses, but also the creation of entire programmes containing interdisciplinary curricula taught by various specialists using interdisciplinary teaching strategies (more specifically Kosová & Hanesová, 2020). Andragogy itself, dealing with learning and counselling for adults in various fields, has – of all educational sciences – the greatest need, but also prerequisites for interdisciplinary orientation and dynamic interaction. Indeed, its further productive existence depends on interdisciplinarity. Learning and counselling for adults itself is a field of knowledge that does not belong to only a single discipline and cannot be solved exclusively by andragogy specialists.

Transdisciplinarity of research and learning is understood as a process of cognition that transcends boundaries not only between the sciences but also all parts of reality. It is a method of research and learning that directly involves political, social, economic actors and ordinary people who contribute from the outside to the construction of knowledge and problem-solving. (Darbellay, 2015, Bridle et al., 2013) It also means applications in a transdisciplinary régime, including universities, institutions, businesses, non-profit non-governmental sector, impulses from various teams, professional associations or employers.

Andragogy, which has to be inevitably open to social and economic practice, will only be successful if its research, learning and counselling transforms via transdisciplinarity into innovation for the needs of the practice. In connection with inter- and transdisciplinarity, the situation will be most complex in andragogical counselling for teachers. Teachers very often spend incessantly their entire professional life at school and assess the entire reality of life from a school perspective. They also perceive their own learning through the learning experiences of children and not adults, which calls for a change through andragogy counselling.

Wide inter- and transdisciplinary networking enables, in particular, **digitisation** that is not merely a prerequisite, but also a driving factor for the spread of change. The future of profes-

sions based on a high proportion of automation inevitably presupposes that andragogy will have to be transformed into a discipline that will dominate the digital environment in terms of content and didactics, which, in principle will, be based on it. In the case of andragogical counselling for teachers, this presupposes not only directing teachers to master the very technologies, but also to new strategies for curriculum design, its didactic transformation and the whole nature of teaching in the digital context.

A question arises whether the paradigm of education itself might change, once all data and theories are available on the Internet and the system of traditional specialised qualifications is considered an obstacle to social progress. **Understanding of education** as mastering traditional cultural values in the sense of a set of knowledge competencies from individual fields of knowledge is likely to change entirely. The futurologist Riel Miller calls it literacy for the future. He understands it as the ability to design and implement expected processes in order to understand and act in a complex emerging context. (Miller, 2015)

This will be required more than ever, with fundamental support for humane and moral values, cultivating person that stands in constant change. Contemporary **educational paradigm** is goal-oriented and normatively oriented. In circumstances where the goal is not yet clear, or is just emerging, it will lead to a change in the educational paradigm to a more procedural one, to the understanding of education as "an open-ended learning process that cares more about remaining open than about one particular outcome." (Bauman, 2001, p. 165) Andragogy counselling, too, will have to be facilitating and open, diverse, respecting different styles of thinking and differences, cultivating the ability to live with ambiguity, developing the ability to change frameworks, modify alternatives, and learn to take responsibility for the consequences of one's own choices.

3. Results for andragogical counselling for teachers

As the transformation of formal education systems requires some time, a major opportunity opens for andragogy counselling for teachers to facilitate the change towards holistic thinking. One direction of andragogical activities will have to help **to change formal education systems** through learning and guidance for teachers at all school levels, including universities. That entails, in particular, the issue of how to *design a curriculum* for children, students and future teachers. Rather than creating a jigsaw of strictly separated subjects and/or sciences, it should proceed in associations and contexts, from a holistic supra-subject perspective, e.g. from the perspective of the qualities and needs of a full-fledged personality, from the perspective of areas of science with a shared method of scientific reasoning, etc.. This also includes the re-raining of higher education teachers to construct higher education teachers or other vocationally oriented education according to professional competencies and standards, or more procedurally according to the stages of becoming a teacher or other professional (more specifically Korthagen et al., 2001).

The change in education systems also presupposes an understanding of the **new roles of teachers** in education, i.e. that the teacher is not a transferor of ready-made knowledge, a supervisor and an assessor. According to Core Education, changing roles are triggered by five key factors:

1. *Changing the "why" of education* – moving from the concept of providing education to enabling learning", to providing learning experiences that facilitate development, open opportunities for students to be inquisitive, creative and innovative. It aims to meet the diverse needs of all students, for learning to be inclusive. At the same time, it means deliberately designing learning to have horizontal links in a wide range of curriculum areas, in the community and in the world.

2. *Technology changing the nature of human capabilities and capacities* – the unpredictability of the future workforce, rapid progress in automation and the development of artificial intelligence to such an extent that the demand for teachers may be jeopardised. It assumes various sets of skills and abilities required for people to contribute to the wider society through innovation, creativity and sustainable practices with minimal impact on the planet.

3. *Changing the concept of knowledge* – thinking of knowledge as a set of cognitive strategies rather than the aim of learning. It is brought about by the exponential rate of change, leading to the rapid emergence and obsolescence of knowledge. It triggers changes in the foundations of knowledge acquisition, and requires recognition of the importance of knowledge of science, as well as of practice and community.

4. *Shifts in the ownership of learning* – increased emphasis on self-determined and self-guided learning of the student and teacher, on the role of the student in their own learning. Students are also teachers of the others, which requires the development of a learning environment conducive of collaboration.

5. *Increased focus on culturally sensitive practices* – prioritising cultural perspectives over a single dominant cultural discourse. It presupposes the deliberate provision of opportunities for students to enhance their connection with their language, culture and identity. It uses original and Western epistemologies, research methodologies and ways of learning (compiled according to CORE Education, 2019).

Downes (2011), aby discusses 23 roles that the current teacher should play. These include, *inter alia*: collector, curator and sharer, who gather, classify, organise and make available in various forms their data portfolios, including electronic ones; facilitator, moderator, coach and mentor who support and guide people in the processes of cognition, communication or self-development; agitator, challenger, motivator and critical friend who inspire in various ways; demonstrator, designer and programmer who create and visualise the curriculum using didactic and technical means; an organizer, coordinator, and connector who link people, form bonds, lead teams and streamline joint activities; or a lecturer and theorist who concretise or generalise, give phenomena a structure, meaning and values. All these roles create new requirements for the different professional and human abilities of teachers.

As it is inconceivable for every teacher to master all roles perfectly, **new educational professions** are beginning to emerge that specialise in some of these roles and provide services to institutions or individuals. They include, *inter alia*, curriculum designer, instructional designer, didactic test developer, digital curriculum developer, school and team consultant / mentor, homeschool consultant, career counsellor, tutor for individual learning, life coach. (College consensus, 2020) In the future new specialisations are expected to be in demand, that focus on the creation and management of educational innovations, organisational development of educational institutions, and the cooperation of humans and artificial intelligence and the use of such experience. New roles for teachers and new educational professions open a wide range of opportunities for andragogical counselling for teachers. They represent another possible direction of this counselling, aimed at improving their work and professional development, as well as for the preparation for the transition to other professions for those who are tired and burned out of their work in the classroom.

The **understanding of the professionalism of a lecturer or teacher** as an expert on self-reflection and self-improvement is increasingly promoted in the world. (Korthagen *et al*., 2001.) The prerequisite of professionalism is the ability to learn from one's own practice in the design, implementation and evaluation of innovations, i.e. models of professionalism, based on erasing the dichotomy of theory and practice. The reflective professional model

assumes that the teacher / lecturer constructs their specific professional knowledge by intellectual vigilance towards their own practice, is aware of their mental structures, critiques and restructures them based on educational theory. (Korthagen et al., 2001) The teacher–researcher model requires taking a research position vis-à-vis one's own practice by carrying out action research, using research strategies and introducing changes based on them. It deepens the understanding of science-based teaching and the creation of evidence-based professional expertise. Andragogical counselling for teachers can thus also be a counselling in the research of one's own professional activity.

Another direction of andragogical counselling is the focus on the holistic development of the adult personality, on the development of the aforementioned **transversal skills**, which will be the basis of future professions. An increasing number of clients will come to education, affected by various forms of lifelong learning and, through technologies, also equipped with a lot of information. The decisive factor will be to teach them to systematise their knowledge and information into a meaningful whole, to help them understand, choose the essential and related, to recognise the contradictory. More than the information itself, what will come to the fore will be conceptual mapping and other synthesising techniques, organising thinking (learning content), visually demonstrating basic relationships and systems.

This goal requires teaching the learner a systemic approach to problem solving. That is based on the ability to analyse phenomena from multiple angles, not to omit any central aspect, to thoroughly search for information for each, and apply it to the chosen case. Yet, this means counselling that leads to the integration of areas of knowledge or theory with practice that encourages teacher to create such a curriculum or teach it in team. The basic strategy for this is facilitated inter-(trans)disciplinary meetings, open communication between experts from different fields, listening and understanding each other's perspectives and potential contribution to joint efforts, particularly through discussion, feedback and formulation of concepts. (More about the facilitation Bridle et al., 2013) This means that the counsellors have to go through a number of forms of inter-(trans) disciplinary meetings – events, workshops, discussions, presentations, evaluations aimed at developing their own holistic thinking.

Of the many questions that arise, one more direction of andragogy counselling for teachers deserves a mention. Ways of human learning are fundamentally changing. In the future, they are unlikely to be predominantly based on reading texts but rather on virtual learning situations. Therefore, a challenge for counselling, too, is helping teachers solve the issues of teaching in virtual reality and its didactics, **educational mastery of technology, cyberspace and virtual reality**. Thus, not only to be able to use them, but also to fill them with educationally and ethically valuable content, to didactically adjust the learning situations of virtual reality with scientifically, historically or ethically correct feedback. Teachers especially will be particularly required to teach themselves and others to navigate among technologies without getting absorbed by them, not only mentally, but principally ethically.

Conclusion

The digital world of interconnected brains and artificial intelligence, whilst time willing to think and act inclusively, requires a man who does not lose his authenticity and human nature, who does not become a mere pendant of technology. Such man will not only be externally driven, but able to project his life towards humane goals. The turn towards the development of personality and humanity is also reflected in the issues of transversal competencies. Since 2013, UNESCO has called them skills for holistic human development that have to be developed in order for people to adapt to change, to lead meaningful and industrious lives, and to create productive, peaceful and sustainable societies.

As changes will accelerate, competencies have to be developed throughout life in order to enable humans to cope with foreseeable socio-economic change, to manage often unpredictable realities, and to ensure that holistic human development is comprehensively supported by all stakeholders. (*Skills for Holistic Human Development*, 2014) Teaching is the profession expected to prepare for these tremendous changes. To do this, teachers need all-round help and support, not only courses and various training schemes, but also a human and individual approach through tailored teacher-centred quality counselling.

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Vzdělávání dospělých 2020 – reflexe, realita a potenciál virtuálního světa: sborník z 10. ročníku mezinárodní vědecké konference Vzdělávání dospělých 2020 konané v Praze 16. prosince 2020.

Adult Education 2020 – Reflection, Reality and Potential of the Virtual World: Proceedings of the 10th International Adult Education Conference (IAEC 2020), 16th December 2020, Prague, Czech Republic (virtual).