SUSTAINABILITY OF SCIENCE IN A POST-COVID WORLD

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Greetings

Ladies and gentlemen, I present to you the monograph "The sustainability of science in a post-COVID world", which is the start of a new intellectual integration project with our academic partners.

The digital breakthrough in the conditions of economic turbulence stimulated the risks that universities inevitably "accepted", although they had not yet transformed their ideologies and had not managed to overcome cognitive barriers. Of course, network communication in the Internet will never replace live communication with a mentor, but it will be able to "build" trajectories of uniting University teams for innovative scientific research, implementing technological projects and attracting digital mentors from all over the world. Finding and working in such teams will definitely reduce the time needed to prepare digital projects, but there is a psychological risk of creating difficulties of trust and responsibility.

Against the backdrop of the economic crisis and turbulence associated with the COVID-19 pandemic, a decline in large-scale academic mobility is an inevitable trend. However, the number of academic migrants may increase due to the increasing difference in the responses of economies and management in higher professional education between developed and less developed countries, as well as the strengthening of General trends in economic integration. The psychological problem of scientific migration has become asynchronous, i.e. uneven, opportunities and adaptation to the new digital environment of University consortia and their implementation in practice.

The publication of the monograph "The sustainability of science in a post-COVID world" is a way for the Institute for Intellectual Integrations to bring together scientists in its pages to share some of the results of research and reflection on science. The pages of the monograph have been opened to all those who care about the process of intellectual integration and the possibility of coming together.
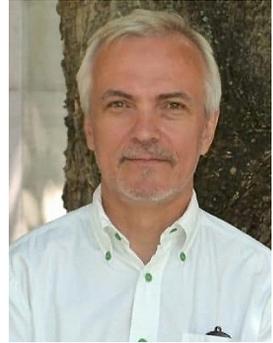
Univ.Prof. Dr.Sc. Dipl.Ing. Oskar Raif. Riabov,
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Editors' Foreword

What is the turbulence of Covid time for us, for universities and our research capabilities?

The times in which we live today are complex times of change. The COVID pandemic has stopped much of what we had before. But it cannot stop scientific thought. Scientists around the world continue scientific research and believe in its success.

Recently, many universities around the world have reported dissynchronous phenomena in education. When we talk about dissynchrony, we always mean the phenomena of misalignment and unbalance. If this is "multiplied" by the situational economic and social picture of the 2020 pandemic, in which diseases and deaths, declining incomes of University employees, mass departure of foreign students from the territories of University countries, the loss of jobs of University administrators, and the crisis of academic mobility have acquired visible and tangible forms of real losses, then we can talk about the turbulence of today's reality. A couple of years ago, managers of higher professional education discussed the trends of the technological revolution, which set additional difficulties in predicting the future of universities. Now the main questions that many people ask themselves: "Is the digital breakthrough into the turbulence of time for stays for a long time or forever?", "Is scientific work possible in a remote online format? Is there a future for international research?", "Is it possible to fund international research projects?"

There are many reasons for social dissynchrony and economic turbulence. Factors of global and regional policies, a set of unsolved problems with national health systems, various types of prolonged economic and political sanctions irreconcilably move the world's universities away from stability. Against this background, niches have emerged that interested economists and leading IT companies have declared as drivers of the world economy: artificial intelligence, smart cities, the Internet of things, and digital education, integration and inclusion, benchmarking and quality of life. In fact, University employees have witnessed a global confrontation and a crisis of human capital. However, dissynchrony presupposes a "new vision" of familiar phenomena and sets new conditions for adaptation to external changes. The accelerated digitalisation of Higher Education, which can be called risky, due to its incredible

speed and psychological unwillingness of subjects to use all its opportunities, has revealed both negative and positive aspects for the quality of University education [Merzon, E. E.; Riabov, O. R. The ambiguity of digital education issues. Psychology in Education. 2019; 1-1:39-43. DOI: https://doi.org/10.33910/2686-9527-2019-1-1-39-43]. We are talking, first of all, about the prospects of accumulated scientific capital in a large network University, where the ecosystem of engagement of people with existing new competencies for training personnel for the digital economy, which is limited by the existing framework and standards of the analog economy, is maximized.

It is equally important to understand that in the quality assurance system of Higher education and science the issue of combining online learning as an educational format and the information hygiene of science is important and timely. The almost instantaneous transition of the training format into digital has allowed many universities and its staff, following the thoughts of Rollo May, "to meet the alarm" [May, Rollo. The meaning of anxiety. New York: Ronald, 1950, pp. 376.], to detect the lack of digital mentors, both for students and for professors, to identify opportunities of various electronic platforms and personal competencies all University administrative staff. Following the words of another classic, Jaroslav Hašek in "Adventures of the good soldier Švejk": "... it has never been so that nothing has happened" [Hašek, Jaroslav. The Good Soldier Švejk. Penguin Classics; 2005, pp. 784.], we are talking about new mechanisms for "reloading" the tools of the quality of education in universities, without infringing on the old/former device, universal complexity and already implemented digital innovations. Following the situational impulses of "COVID-19 – time" in parallel analysis, it turned out to be a difficult way to adapt even the most efficient competencies of University employees to the inconsistent, unclear and dissynchronous picture of what is happening in the system of higher professional education during the pandemic, especially at its first stage.

One way or another, scientific research has also been affected. Old / previous problems, without having time to find a solution, were transformed into "new equations" with a set of "unknown variables". In this sense, we can talk about a new experience of the "strength" of the world's University systems, academic mobility and quality assurance systems in international research, as well as the development of quality assurance strategies: to be ready for all kinds of threats, ideally, for any. Then the price of error increases almost in proportion to the threat, and to gain

clarity and firmness of action, you need to accept and recognize the fear of the threat and optimize ways to overcome it. The digital breakthrough was able to balance the threat and actions to optimize training for the digital economy. At least in the first round between "University players" and players of "digital" learning opportunities, those who were at the helm of digitalization implementation at least 5 years ago took the upper hand. But the rest had to fully "drink" new science and acquire new skills. There was no uncertainty at that moment, on the contrary, everything was very clear: if you don't know how – learn, if you didn't do it – do it, if you didn't use it – use it. The digital mentoring vector abruptly changed the direction of the beam. The digital mentor in the University system has now come to play a big role in creating interfaces that allow you to determine what is most effective for each learning student and for each teaching University Professor. A similar thing happened to research professors and their laboratories. Enriching learning content is also the responsibility of mentors, who are more flexible than anything or anyone, can regulate the vector of focus on the subject-new in digital learning: remote learning, quality control test programs, systems thinking, intellectual property, bioinformatics, introduction to blockchain, working with virtual reality technologies, neurotechnologies, computer psycholinguistics, graphic design, and so on [Sibgatullina, I. F.; Ryabov, O. R. Flight of time into digital education. Project "Traditions and Innovations": digital education, issue 1 (4). Kazan, Russia: Institute for Education Development of the Republic of Tatarstan; 2019, pp. 75].

A characteristic sign of the revealed inability of many universities to meet digital challenges is that the largest leaders of global transformations in the world, such as Google, Microsoft, Apple, as a rule, do not enter into a symbiosis with universities, solving the problems of reproduction of personnel within themselves, in fact, working as independent "funnel universities", building their own process of personnel production for the digital economy. In fact, the digital breakthrough in the turbulence of the pandemic time revealed a tendency towards 'Project' universities that were able to set up a network of startups for digital education, a favorable environment for digital businesses, social initiatives and clubs, even in the most unfavorable conditions. In this case, scientific and technological Commerce can grow around and within universities. But if the University does not set the task of growing local and global businesses, and is positioned only as a cultural monopoly, then it can not avoid the dilemma between investing in passive assets of

human capital and the risks of digital innovation [Sibgatullina-Denis I., Vančová A., Merzon E., Zakirova L. Digital breakthrough in the conditions of social dissynchrony and economic turbulence: for a long time or forever? In: Ziganchina E., Gibadulin R., editors. Modern labor migration. Social issues and challenges of new time: collective monograph. Moscow: MPSU; 2020. p. 19-22. https://drive.google.com/file/d/1MVYR-WIsiwVhSwXfon6Z0viptMY9RRGCV/view].

In the opening pages of the monograph, which we offer to university researchers, there is a short discussion by the authors about the problems of living as scientists during a pandemic. Also, in the preface, we want to address the issues of scientific migration and academic mobility.

Migration processes are continuously monitored by world regions [Gerhards, J., Hans, S., Drewski, D. Global inequality in the academic system: effects of national and university symbolic capital on international academic mobility. High Educ.; 2018: 76, 669-685. DOI: https://doi-org.uaccess.ac.at/10.1007/s10734-018-0231-8; Heike, J. Transnational academic mobility and gender, Globalisation, Societies and Education; 2011: 9:2, 183-209. DOI: https://doi.org/10.1080/14767724.2011.577199]. The time of the COVID-19 pandemic was no exception. The events of the pandemic time have also affected many processes of the Higher Education world order and required a new look at the analysis of academic mobility processes. This was particularly true for intellectual integration projects, a very significant element of the system integration of education in all regions of the world. The pandemic time still bears an existential imprint [Kashevarova, A. Existential storm: from emptiness to meaning. The Russian [Internet]. 2020 April 9 [cited 2020 Jul 15];Psychological newspaper: [about 2 p.]. Available from: https://psy.su/feed/8121/], because, among other things, it concerns the foundations of existence and the psychological perspective of the life of academic workers. For many of them, not only social, but also internal psychological contradictions have increased, the usual order of life and academic mobility has got disturbed. The rapidly emerging COVID-19 pandemic became a trigger that, using collinear vectors [Collinear vectors [Electronic resource]. Available at: https://onlinemschool.com/math/library/vector/colinearity/], directed the situational anxiety of academic workers to questions about the future of academic migration and academic mobility in General, their own cognitive and emotional vulnerability in the context of social dissonance.

Have mobility programs in University consortia been put on "pause" for a long time or forever? What happened to those who found themselves in the "migration / immigration path" during the pandemic? And what is the intellectual "price" of all this for online University alliances in the face of already economic turbulence? How much did the threat of such a "pause" increase the uncertainty of the future quality of professional training of scientific personnel in the world's universities, the future comparable results of research by joint scientific laboratories and international teams of scientists? However, the characterization of the essence of international migration as a social phenomenon still remains a perspective. However, if we consider academic migration in the period of the pandemic crisis as a social problem, we should assume its unpredictable asynchronous changes in the future. We are talking about changes that are now even difficult to predict. The only thing that can be stated is that the current status quo is specific.

A pandemic is a case where social institutions, mechanisms and governance systems of any state are tested, including in the field of migration. Counteracting the spread of COVID-19, most States have made changes in the regulation of migration, but these actions have affected the strengthening of controls at external and internal borders, restrictions on mobility within countries, facilitating the return of citizens to their countries, liberalizing immigration practices, extending and obtaining immigration documents, limiting quotas and transfers under the Dublin rules [Convention determining the state responsible for examining applications for asylum lodged in one of the Member States of the European Communities – Dublin Convention. URL: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A41997A0819%2801%29; International Migration Journal. Available at: https://www.iom.int/international-migration-journal]. Against the background of these problems, the COVID-19 pandemic also revealed many problematic areas of migration management "within the social and psychological picture" of academic mobility. For example, the complete absence of state programs to support academic workers from abroad, their eviction from their places of residence if the Professor did not rent housing independently, but lived on University campuses; ignoring or delaying requests for extension of documents for legal stay in the case of an objective lack of opportunities to return due to the disease COVID-19. During the period of self-isolation, many foreign academic workers faced neglect of their circumstances by the leaders of hosting Higher Education Insti-

tutions, since the main efforts of managers were directed at organizing remote digital training of students and supporting the level of professional training. In the ranking of rectors' attention, academic mobility programs came in last place, and this is at best, compared to the obvious ignoring of the problem at all.

Wang Haiyang, a researcher of academic migration processes from the northwestern pedagogical University of Lanzhou in China, suggests that these international processes are primarily the result of economic and social development, since they largely contribute to the development of the economy and the improvement of universities, or lead to intellectual losses and stagnation in the scientific and technical industry [Wang, H. International academic migration: history and trends. Historical and Social-Educational Idea; 2018: 10(2-2), 58-66. DOI: https://doi.org/10.17748/2075-9908-2018-10-2/2-58-66].

Let us note that international academic migration has a strong impact on the world economy, the world labor market, society and political institutions, stimulates the popularization of culture and cooperation between receiving and sending countries and their universities, and challenges globalization in the world educational environment [Wang, H. International academic migration: history and trends. Historical and Social-Educational Idea; 2018: 10(2-2), 58-66. DOI: https://doi.org/10.17748/2075-9908-2018-10-2/2-58-66]. The COVID-19 pandemic has severely restricted the movement of academic staff, reduced the opportunities for joint "live" scientific work in research and experimental laboratories and research and practical productions, student training programs, joint training projects in rare specialties (for example, such as the architect of unique buildings, educator of integrated multicultural preschool organizations, biotechnological therapist, genetic consultant, etc.), the implementation of planned grant "breakthrough" research, related to the development of new engineering equipment, special equipment, and technological modules).

In general, the status of academic mobility in the structure of long-term and short-term international migration remains quite high even during the pandemic. But it is becoming "transformed". Chaotic trends become dependent not on the framework of educational policies of the world regions, but on regional trends of the pandemic. In the structure of the established order, there is an invasion of chaos and uncertainty.

Identifying the content of the concepts, we note that the group of the category of intellectual migrants always consists of highly qualified spe-

cialists quoted on the international labor market, and can both coincide and differ from the essence of the category of intellectuals – representatives of the group of academic mobility. That is, for example, if a University employee participates in the inter-University framework programs "Foreign Professor", then they are included in the group of academic mobility categories within the framework of the consortium. However, if one of the universities of this Alliance offers a Professor employment and he agrees, then his move to another region can be called academic migration, especially if it is a question of leaving his country on a long-term contract for more than a year [Sibgatullina-Denis I., Vančová A., Komarova L., Kirsha A. Asynchronism of academic mobility processes and the intellectual integration crisis in the context of the COVID-19 pandemic events. In: Ziganchina E., Gibadulin R., editors. Modern labor migration. Social issues and challenges of new time: collective monograph. Moscow: MPSU; 2020. p. 22-27. URL: https://drive.google.com/file/d/1MVYRWIsiwVhSwXfon6Z0viptMY9RRGCV/view] .

Publishing a monograph is not easy. It took our team exactly one year to get the monograph "out there". The "architecture" of the monograph may seem, at first glance, unexpected. The following different sections are presented in the monograph:

- Current trends in the development of science and education
- International trends in the development of European universities
- Education development strategies 2030 in the field of inclusion and special pedagogy
- Psychology and pedagogy of modern education
- Education Management in Lifelong Learning
- International experience of integrating education
- Current models for analyzing the optimization of the organization's capital structure
- Current child protection standards

The editors have combined all possible vectors, which in one way or another reflect the texts of the articles, to the best of their ability. It has not been an easy task. We did not limit ourselves to just one section, but included many studies and reasonings that proved relevant to groups of academics in the monograph. Note that all the articles are written by small groups of academics, which was an important part of the idea behind the association.

We thank everyone who took part in our project.

Special thanks are due to Raman Ganguly and Guido Blechl for their

competent advice on European open access systems; to Elena Merzon, who actively supported the publication of the monograph at all stages; Oskar Raif. Riabov for inspiration and assistance in the pre-press preparation of the monograph; and Alica Vančová, Susanne Blumesberger and Lane Maerz, who, despite the difficult COVID period associated with the loss of loved ones, found the strength and time to be with us in the project and help us.

The individual authors provide acknowledgements for the people who assisted them in their research in their own respective.

Irene Sibgatullina-Denis, P. Sebastian Max.Hacker, Alla Kirsha

Doctoral Discussion

Univ.Prof. Dr.Dr.Sc. in Psych. Irene Sibgatullina-Denis asks: Dear colleagues, what does the uncertainty of the current time mean to you personally?

PaedDr. Margaréta Osvaldová, PhD replies: Uncertain times have taught to value more health, relationships especially human contact and resources. The result of today's uncertain times means a new level of awareness and appreciation of creating an effective strategy in the way of thinking, acting in daily live.

Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: For me personally, this situation complicates the process of research activities, but on the other hand, it makes it possible to develop in the digital space and facilitate research without leaving home. The uncertainty of the current situation of the pandemic and quarantine measures in the world forces us to reconsider approaches to practical scientific research, meetings with colleagues one-on-one, conducting analysis with direct documents and materials.

Doc. PaedDr. Terézia Harčaríková, PhD: The uncertainty of the current time is a challenge but also a burden, in a sense. One side offers me the opportunity to develop, face new challenges and get to know themselves in new situations. On the other hand, there is also concerns and fear of the future, both in both labour and personal life.

Doc. PaedDr. Lopúchová Jana, PhD: The current situation is not only a personal, but also a professional challenge. The changes that have taken place will remain an integral part of further development, of course also professional development.

Univ.Prof. Paed. Dr.Sc. Alica Vančová asks a question: In what do you think the existential nature of academic life in the pandemic has manifested itself?

Mag. Dr. Susanne Blumesberger, MSc answers: We need people who are rapidly engaged in solving problems in a global and multi-layered way.

Doc. PaedDr. Lopúchová Jana, PhD: Academics were hit hard by the pandemic, in particular by the transfer of education to online space, which required an increase in the digital competences of both students and teachers. The situation also required the expansion of knowledge

in the field of digital/electronic support, especially the knowledge of apps/software for quality teaching and communication. However, in my opinion, academic compactness has not been significantly impaired. Although weakened were informal professional discussions often taking place on university premises and, of course, mass events (conferences, workshops, etc.).

Mgr. Kristína Nagyová, PhD: In my opinion, the existential nature of academic life was reflected in the ability of flexibility, teamwork and elasticity of the university and its members. In some sense, the current demanding situation pointed out both positive and negative sites of academic life while helping to understand the current state and future routing of the university.

Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: The existential crisis of academic life manifested itself in the complication of research activities in a number of areas, such as participation in conferences, conducting empirical methods abroad, communication with colleagues and interviews with prominent scientists and specialists in the field of problematic issues that require immediate study and solution.

PaedDr. Margaréta Osvaldová, PhD: It is a hard way that simply delivering course materials through digital platforms is not the best way to teach students. Online university isn't the proper way of studying. It should be two-way learning. With instructors distributing video lectures early, and focusing in-person time on interacting with students to ensure that they understand the concepts being taught.

Univ.a.Prof. Dr. Elena Merzon asks: How has time changed you as a university lecturer/academic staff?

Univ.Prof. Dr.Dr.Sc. in Philos. Natalya Martishina replies: The positive feature of our getting used to the instability of social life is the acquired individual ability and readiness to view any unforeseen challenge as an opportunity. Thus, over the last year we took part in scientific conferences even more often than usually. Before that, a university lecturer could annually visit one or two scientific conferences held elsewhere. However, the online scientific events became more accessible and gradually they were bringing more satisfaction as many of us learnt to use new online technologies, so that the difference with offline communication diminished step by step. We suppose that due to online technologies the mode of communication between scientists will only get better.

Doc. PaedDr. Lopúchová Jana, PhD: This pandemic has changed the

whole concept of my work. I had to start planning more, preparing more electronics materials, transforming lectures and especially distance teaching practical subjects.

Mag. Dr. Susanne Blumesberger, MSc: The pandemic forced me to leave well-trodden paths, to look for alternatives and try out new things. Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: Throughout my professional career, the time has changed me dramatically and gave me the opportunity to show my career opportunities to the fullest. In addition, pedagogical activity is directly related to young people, which helps to think creatively, look for new approaches in work and maintain a cheerful outlook on different processes.

PaedDr. Margaréta Osvaldová, PhD: The pandemic has highlighted the need for flexibility and invest more time for student-teacher interactions. We established several different forms of online lectures. The most dominant forms of online lectures were real-time video lectures, sending presentations to students, having online consultations via MS Teams. At the college level, some of them (about 20% of faculty) have seriously considered changing careers or retiring earlier.

Doc. PaedDr. Terézia Harčaríková, PhD: Time provides me the possibility of developing my skills and abilities. It provides me to get to know my current state, myself but also life on academic. It allows me to determine priorities and thus direct me to my future action as an academic staff.

Univ.Ass.-Dr. Alla Kirsha, PhD pth. askes: What reasons do you find for the crisis of academic mobility for yourself, your colleagues and students?

Mag. Dr. Susanne Blumesberger, MSc answers: We have learned to coordinate and communicate differently. But we must not forget that many who are not well equipped, for example technically or spatially, fall by the wayside.

Mgr. Kristína Nagyová, PhD: It is probably the current pandemic situation, concerns resulting from it, but also the effort to be close to their loved ones.

Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: In the current crisis, academic mobility is mainly associated with the closure of the borders of many states in connection with the Covid-19 pandemic. However, the use of digital tools can solve this problem a little.

Doc. PaedDr. Lopúchová Jana, PhD: I consider international cooperation to be very important and enriching. Restrictions on mobility have

negatively affected project cooperation and the possibilities of exchanging experiences for both students and teachers.

PaedDr. Margaréta Osvaldová, PhD.: Academic mobility seems to be nowadays in crisis for loss of safety and security caused by pandemic situation. There is a lack of international cooperation in solving projects. However there is a partial solution in the form of „online mobility" which can temporarily replace the real contact. Me and my colleagues none of us took part on teacher´s mobility last academic year. However we are in contact with colleagues abroad. Only 10% of students took part of personal mobility in foreign universities last year, 30% of students took part on online mobility and 60% of students gave up the student´s mobility.

Univ.Prof. Dr.Sc. Dipl.Ing. Oskar Raif. Riabov wonders: What do you personally experience so far in times of uncertainty and turbulence?

Univ.a.Prof.Dr.Sc. in Philos. Elena Taskaeva: Probably, the feeling of uncertainty and instability related to the COVID-19 pandemic that was typical for citizens of many western countries was not really crucial for people living in Russia simply because we got used to the permanent instability of Being due to our historical experience. Just a month before the epidemic started nobody had an idea how radically our everyday lives would change, and empty streets, empty university classrooms would become our new reality. However, during the lifespan of our generation there were so many unpredictable social events in Russia that the pandemic restrictions seemed to be just another unexpected situation that we had to adapt to.

Doc. PaedDr. Lopúchová Jana, PhD: The present brings tension and uncertainty, which is not good for free and creative thinking. In my opinion, time brings a personal creative crisis with the impossibility of obtaining empirical data, especially in the educational environment of school institutions and in the counseling system.

Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: I am experiencing a problem with some research resources being unavailable. Some governments specifically block access to local sources of information. This complicates the research situation. For example, Chinese language sources are difficult to obtain due to cybersecurity policies.

Doc. PaedDr. Terézia Harčaríková, PhD: Especially time-consuming work behind a computer, it is very difficult to work most of the day behind a computer, without the possibility of personal contact.

Mag. Dr. Susanne Blumesberger, MSc: Concentration on the essentials, flexibility, but also the discovery of previously hidden resources of strength.

PaedDr. Margaréta Osvaldová, PhD: One doesn't take things for granted and have learned to value what matters. Sometimes feeling anxious, but also trying to act more purposeful and meaningful.

Univ.a.Prof. Dr.Sc. in Ped. Irina Nurgatina asks a question: How can science become even more sustainable in the present moment?

Mag. Dr. Susanne Blumesberger, MSc: We have seen that all the digitisation efforts are in fact still quite in their infancy. We are far from having research results, literature, data available worldwide. Cross-border cooperation is needed to make scientific results available in the long term.

Doc. PaedDr. Lopúchová Jana, PhD: Intensive communication and sharing examples of good practice and personal experience. By joining joint creative forces in favor of quality outputs of creative activity and a sufficient dose of humor, insight and psychological well-being of professionals.

Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: At the moment, scientists all over the world need to continue the struggle for the availability of information, undoubtedly engage in research through innovative and information technologies, and this will maintain the pace of scientific research and the sustainability of the scientific community.

PaedDr. Margaréta Osvaldová, PhD: There is a necessary connection between science evidence of pandemic situation in education, and policy. This is specific for each country helping to implement the right strategies. But also being open for parts of global approach if possible.

Univ.Prof. Dr.Dr.Sc. in Philos. Natalya Martishina: It seems to us that due to the current unstable situation the window of opportunity is open for science in general. The value of science proved to be an undeniable fact, as a new medicine needs to be created through research and development before it becomes a marketable good or a tool in a political game. The breakthrough of the scientific thinking cannot be replaced with any social instruments, managerial activities, or sets of policies, such breakthrough should be prepared by the steady development of science within the society. Hopefully, the public will at last understand the value of scientific achievements and the need to constantly (not occasionally) support the development of science.

Mgr. Kristína Nagyová, PhD: From one point of view, working from home is demanding in terms of teaching, practice. On the other hand, there is a large space in which scientific outputs can be written and further published.

And one last question from Univ.Prof. Dr.Dr.Sc. in Psych. Irene Sibgatullina-Denis: Do you agree that we have all changed in some way? Do you think that time has changed us as scientists?

PaedDr. Margaréta Osvaldová, PhD: We have been forced to be more resourceful in how we meet certain goals and objectives. Also trying to be more adaptable to the situation and flexible in solving the problems. Mag. Dr. Susanne Blumesberger, MSc: The way we communicate with each other has changed, the way we learn and teach, the way we read, do projects and share our research.

Doc. PaedDr. Terézia Harčaríková, PhD: Certainly yes. From the point of view of medicine, science began to deal with the consequences of Covid-19 for the rest of life, from the point of view of psychology there is a large increase in burn-out syndrome not only in doctors, but of course in teachers and students.

Univ.a.Prof. Dr.Sc. Aiman Azmukhanova: I agree with the statement that time changes us as scientists. We had to change ourselves. The real world no longer tolerates a philistine attitude towards science. The scientist needs to develop himself in every possible way, look for extraordinary ways of thinking, tools to achieve goals, achieve better results in his work and other new approaches of analytical thinking.

PaedDr. Lopúchová Jana, PhD: Yes, I do agree. We have all changed in some way. And I think that time has changed us as scientists definitely. The focus of our scientific thinking is currently influenced by many factors, such as online education and communication, fatigue of experts due to more intensive work with computers and other technologies, fear of personal meetings, pandemic measures at the state level, fluctuating disease situation, reduced level of communication (especially in the perception of accompanying communication phenomena), inability to attend mass discussion events, etc. However, in essence, academic thinking, freedom, and integrity have been essentially preserved with a vision of moving forward.

Univ.a.Prof. Dr.Sc. in Psych. Elvira Sadretdinova: I think we have become more open to new forms of communication and are strongly motivated to master the digital technology as much as possible.

Chapter 1

Current trends in the development of science and education

Elena Merzon

Oskar Raif. Riabov

Digital perspective benchmarking in solving indeterminate equations

Abstract. The authors of the article offer a discussion about digital perspectives in education in the conditions of stable and, or crisis events. Contingently, by indeterminate equations, the authors mean events that require the necessary and sufficient efforts to equalize and transform an unknown quantity into a known and clear one. In search of the clarity, the world pedagogical community is looking for answers to the question: how to combine rapidly growing digital education with steady accumulation of competencies in its use, the significance of digital hygiene and an arsenal of necessary resources, mastering of novelties in the profession and the state of confusion because of the sharp transition to distance learning at all stages of learning and the competition between formal and informal digital technologies? The authors apply benchmarking technology in considering the question, that is, the identification of various experiences and the comparison of the best practices to real situations, questions from the readers and opponents.

Keywords: education management, internal and external benchmarking, digital perspectives, crisis events, digital resources.

Digital perspectives benchmarking in the face of education increasing uncertainty is a complex and multifunctional identification process. Nevertheless the authors decided to reflect on it, on the grounds of managerial experience and a comparative analysis of European digital education practices. The authors employ Skelton's definition used in international education in defining the concept, which considers benchmarking "... as a process of identifying, studying and adapting the best practices and experiences of organizations to improve the performance of their own organization" [21]. World strategies, at least to some degree of "understandable tomorrow" [15], have changed the search for new life strategies during crisis events.

This refers directly to digital education. The study, comparison and adaptation of digital education practices is now more relevant than ever in the whole world, because the mirrors of the perception of the professional life of teachers at schools and universities have reflected images of the "unpredictable future" in the light of solutions to indeterminate equations [20]. By indeterminate equations, the authors mean equations containing more than one unknown or more than one variable. From the point of view of mathematics, an indeterminate equation has an infinite number of solutions, and, usually, mathematicians look for a solution in integers or rational numbers [7].

To one degree or another, teachers of the world are faced with the mathematics of life, because there appeared an equation in their professional activity that requires a solution. For those who have forgotten mathematics, we recall that the equation is an equality with an unknown member that actually needs to be found [7]. Besides, if an equation has two or more variables, it includes the corresponding number of unknowns. Actually, they need to be calculated. But if there is a rule and an order of calculations in mathematics, it is more complicated to find a solution in modern teachers' life events, although it would be useful to apply mathematical formulas.

Digital Agenda for Europe, the flagship European strategy for information computer technologies, states that by 2025 90% of professions will demand the highest IT skills from a job market candidate [17]. Although, it is true that no one has explained to the world pedagogical community what the highest IT skills are and how they manifest themselves in crisis events, in social and psychological uncertainty including at least one unknown – the ending time of expected or unexpected crisis events. The Communiqué of the European Commission has long been

anxiously informing the world pedagogical community that according to the results of "closed polls" about the quality of using the most innovative digital educational technologies, such as the MOOC systems – Massive Open Online Courses (https://www.mooc.org/) – out of the 2,000 school principals surveyed, only a third had an idea about them. Another third was still confident in the IT competencies that they demonstrated. The rest of the principals could only verbally present electronic textbooks, educational software, podcasts, simulations, educational games and etc. from the digital educational format available in their schools in case they need to use total distance education. "Digital revolution by united efforts" is a slogan that was proclaimed by the world pedagogical community in the hope that it would be easier to find a solution to the indeterminate equation of time in the complex and unclear problem of the future digital school together than to solve the problems alone [6].

Benchmarking of the process studies the entire "kitchen" of the process of obtaining the result, its (process) quality and compliance with standards. In other words, it is a "qualitative" (along with quantitative) analysis of what is done and how, as well as an analysis of factors and conditions that affect how it is done" [16].

Such an approach to solving the problem of creating a single digital school space of an unexpected present and vague future made it possible for educational systems of various states wishing to "enter" a single educational space, to harmonize themselves and get as close as possible. However, the history of the use of ICT methods in education and even more so the history of the use of digital technologies in different countries still vary significantly. In this regard, all the interested participants in the process of creating a single digital school of the future – students, teachers, parents, online communities, commercial and non-profit organizations – need to combine their efforts in order to "track" and increase the level of "digit" in their educational organizations.

The global crisis events of March, April 2020 (www.who.int) have proved it. Teachers from all over the world, no matter where they are engaged in pedagogical work, have begun to discuss the need to launch new resources that could become a kind of "tournament table" of global digital education. The reason for it was the need for quick decision-making on the use of a particular educational platform and the recommendation of the platform to the learners. That is why it required an informational and analytical resource of "quick destination" that would become a kind of digital education navigator in special conditions. The

resource contains statistics about the level of informatization and digitalization of various educational organizations around the world as well as the one whose resources can be used by others at the time of collapse and unpredictability. Thus, participants in the process of creating a digital school of the future interested in information will be able to familiarize themselves with it in order to find out where active actions are still needed, what specific steps should be taken to achieve a goal that is often blurry and not fully understood.

As for the use of mathematical models for solving equations, progressive educators are involved with maximum accuracy in solving problems of finding such values of arguments (variables, unknowns) in which equality between the value of the demand for digital education and the value of the level of IT competencies is achieved. Nevertheless, additional conditions may be imposed on the possible values of the arguments. The European Commission on Education has already launched the European Hub of Digitally Innovative Education Institutions [18]. This resource demonstrates the high degree of high-quality application of digital innovative practices in the organization of training, and their creators are already awarded the European Award of Digital Excellence supported by the International Council on Open Distance Education (ICDE) and international economic cooperation and development organizations.

Moreover, institutes of intellectual integration (www.rbs-ifie.at) are already operating in Europe, they are becoming a virtual platform for school and academic institutions helping to join efforts in the introduction of informal digital education technologies and to form teachers' requests for continuing education programmes, taking into account the achievements of their schools' competencies in the field of digital economy [12]. In general, the world pedagogical community, just like other specialists in the field "man – man", do not distance themselves from the tasks set by time, and are active in business communications with experts in the information industry.

As far back as September 2015, the International Expert Council of the World Economic Forum on the Future of Software and Society published the report "Deep Change – Technological Tipping Points and their Impact on Society". As a result of the study, which involved 816 leaders and experts of the information science industry, the experts obtained data on the most vulnerable points of digital education and its use in various economic, social and psychological conditions. According to the study, all the turning points should occur before 2025.

Since 2018, teachers and learners "have formed" various cognitive platforms in order to understand conceptually what "cloud technologies", the Internet of things bank, artificial intelligence, big data, virtual and augmented reality, Blockchain and its most important application "Cryptocurrency" are. Or what are various types of computer platforms that create a sharing economy?

No less important in order to understand the concept of digital technologies and how they can be incorporated into the educational process is an understanding of such phenomena as unmanned vehicles, 3D printing, robotics and new materials, genetic engineering and synthetic biology, and etc. But it is rather an expected anxiety, which in reality turns out to be psychological, for the effectiveness of the learning process, the adoption of distance learning only in combination with the "live" one, the search for effective platforms, a discussion about the need and, or sufficiency of digital education in primary school [13].

What do the transformations order? Now, few people argue that industry 4.0 is an inevitable transformation in the labour market, and therefore in the education market. The inevitable consequence of industry 4.0 is the psychological adaptation of all of us to the digital environment and the awareness of the threat of losing our jobs and "not taking advantage" of basic education. It would it seem a paradox, but according to the chairman of the World Economic Forum 2016 Klaus Schwab, all of us are witnesses of the fourth technological revolution and the sixth technological mode: there is a merger of technologies, the boundaries between the physical, digital and biological spheres are erased [4]. If a year ago while reading this quote we focused more on "... the borderline between the physical and the digital ..." now during the 2020 global pandemic, "... the line of the "biological" has become clearer to us. For the past few years, the modern pedagogical world has reduced the essence of the issue to training a person proactively and psychologically for the reconfiguration of the world of technical capabilities and the acquisition of specific skills while maintaining the value of education in general, the value of developing critical thinking and the ability to learn independently.

In accordance with the ideas of Industry 4.0, the first industrial revolution (the late 18th – the early 19th centuries) was caused by the transition from the agricultural economy to industrial production due to the invention of mechanical devices, the use of steam energy and the development of metallurgy. The result of the second industrial revolution

(the second half of the 19th century – the beginning of the 20th century) was the use of electric energy, followed by conveyor production and the division of labour. The third industrial revolution (since 1970) is an intermediate one and is associated with the use in production of electronic and information systems that provide intensive automation and robotization of production processes. The forecasted fourth industrial revolution means the emergence of a fully digital industry based on the mutual penetration of industrial and information technologies. As experts predict, the scope of cyber-physical systems will not be limited to production and will be extended to all types of human activity, including a variety of industrial systems, transport, energy and military systems, all types of life support systems from medicine to smart homes and cities, as well as many economic systems. The creation of full-fledged cyber-physical systems … in the future will lead to approximately the same changes in interaction with the physical world that the World Wide Web brought about in its time (from the materials of the webinar "Alphabet of the Digital Economy" by Yu. Yu. Cherny, Moscow State Pedagogical University [1]).

The essence of the latest technological structure is to replace multiple information by significant, by the necessary knowledge, which is the priority of a producing rather than a consuming economy. According to the forecast of the world leading economists, at the current pace of development, this way of life will have been completely formed by the middle of the 21st century [19].

A study by the University of Oxford (The Future of Employment: How Susceptible Are Jobs To Computerization) is widely quoted in the media, in which, using mathematical analysis with nine variables, a list of the most probable professions that may disappear from the list of professions in the modern labour market was calculated. This included numerous clerks, operators of machines, machine tools and laboratory devices, punch press operators, controllers, testers, various builders, repairmen, as well as the personnel that we used to see at fast-food cafés, at reception desks in hotels, airports, some engineering specialties in the design of engineering systems, speakers, etc. These examples are trivial for the teacher. But the reason for the unresolved equation is only the fact that the teaching professions also staggered in their stability precisely due to the vital need to introduce digital teaching tools. What does benchmarking of the social and psychological aspects of the digital learning environment show and how to respond to digitalization in the context of global and regional development strategies?

A modern teacher, living anywhere in the world, of course, understands that the problem has approached education from an unexpected direction. This is not only a question of what to do if robots and new technologies are already beginning to force an educated person out of the profession. First of all, it is a question of the effectiveness of applying IT competencies in various educational conditions and in various life circumstances. In this case, we are talking about training in the conditions of equal distribution of digital and live learning, and about learning only in the distance mode with its dominant in the use of digital resources.

What should be learned to compete with "smart machines" and, or not to compete, but to interact with them? The emergence of software with artificial intelligence, which was facilitated by the "rediscovery" of neural networks in the early 2010s, allows trusting the computer routine to the office administrative authorized system. In this sense, both internal and external benchmarking determines leaders quite simply.

Internal benchmarking is carried out in one educational organization, but it involves many, statistically sufficient, subjects performing the same functions in digital education. In this case, the internal expert, or independent expert, determines the best practice based on the criteria for the effectiveness of the organization as a whole.

External benchmarking compares similar activities of different educational organizations and companies in various areas of digital education. In its turn, external benchmarking can be divided into: competitive (competing educational organizations with equal opportunities are studied in one "market"); functional or industry-specific (similar to competitive, but studies a larger number of educational organizations in one region or several regions); global (a large amount of data is being studied for various educational organizations in order to identify the most successful experience regardless of industry) [14].

We must note the fact that no matter what benchmarking may be it seldom includes parents. Meanwhile it was precisely the parents who became the first, albeit intuitive experts, during the crisis period, as to what extent the educational organization found a solution to the indeterminate equation of operational and effective digital contact with the learners. Parents of first-graders who brought their children to school in 2020 are already concerned about the digitalization of the educational environment of the school in which their child will be studying over the next 11 years. This is important for the parent, because he wants to be

sure that in 2031 his child, being a school-graduate, will fully possess the competencies of managing this digital environment to the extent that will be required by the development of the digital economy over the next 11 years. What can we say, for example, about 2050, the year when graduates of 2031 will have already received higher professional education and, having mastered in the chosen professions, will be managing the digital economy as specialists?

A few impressive numbers should be given here. The global turnover of robots is monitored by the International Federation of Robotics – IFR. According to its estimates, in 2010s, it grows annually by 12%. In 2016, the result was 294 thousand copies, out of which 191 thousand were sold in Asia, 56 thousand in Europe, 41 thousand in North and South America. The forecast for 2021 is 521 thousand robots sold, and their total number in the industry should exceed 3 million. In monetary terms, the mechanical labour market is growing by 5% per year and will reach $ 41 billion in 2021 [5].

We frequently hear in pedagogical discussions: "And yet not everyone will be fired, will they?" Of course, even the most advanced robots are subject to only linear logic, template behaviour. Therefore, the work that is difficult to systematize possesses the greatest potential for being preserved. The list of qualities and skills required from a person has just begun to be discussed by specialists, but one thing is clear – such qualities and skills as originality, improvisation, critical thinking, and the ability to assess difficult situations and make decisions gains advantage. Those who know how to manage and convince, as well as create in the field of fine arts and handicrafts, are not threatened by the loss of their profession. In total, the researchers listed 109 professions for which the probability of computerization is less than 3%; all these professions adequately combine not only linear and rational intelligence, but also emotional intelligence and empathy [5]. According to the experts' opinion, "safe" specialties with a low automation probability index include, for example, such ones as a physiotherapist, emergency dispatcher, psychologist, narcologist, prosthetic surgeon, nutritionist, choreographer, investigator, dentist, interior designer, motivational trainer, computer system analyst, recruiter, social worker, forester, rehabilitation consultant, logistic, etc. [5]. If we carefully read the list of these professions, we can find their general "human assisting value", which is difficult to automate. The profession of a school teacher occupies a special place of honor in the list of promising professions, as it is not only a conglomer-

ation of competencies and pedagogical techniques, but also an eventual spiritual unity that can build relationships and profound knowledge of the new.

There is no single recipe for what skills you need to possess today in order not to lose your profession in the future. On the one hand, maximum specialization will be required, on the other hand, versatility and a broad outlook. Since everything is changing so quickly, will one have to study all your life? Experts predict that in some specialties this will become an obligatory part of the annual cycle: 9 months' work, 2 months' study and 1 month's leave. Evidently, those who initially have a craving for self-education will be more successful than others.

In the series of projects of the Higher School of Economics of the Russian Federation "12 solutions for new education", Project 2 is devoted to the "School of the Digital Age", the mass use of digital educational games and digital simulations since 2020. The Project developers inform teachers that new digital tools can be introduced into the traditional educational process of the school based on existing standards and textbooks and will serve as a transitional form for teachers to learn new teaching methods that meet the requirements of the Digital School project. Additional specific innovations regarding the work of teachers involve the introduction of modern technological solutions to radically simplify reporting and reduce routine types of work for teachers and heads of all educational institutions; transition to new type of contracts with providers of the Educational Resource Centres (Centre). This includes training and certification of teachers to work with new resources, ongoing counseling of teachers, organization and support of project teams, involvement of teachers in the development of training modules and other educational resources on the basis of the Centre; creation, updating and promotion of open online courses of the best teachers and university professors in basic and specialized subjects of basic and high school, as well as subjects of additional education, including those for children who are not able to study relevant subjects at school [2]. The small obstacle is the fact that vital crisis events changed the plans, the demand for innovations being at its peak in February 2020 in Europe and in March 2020 in the Russian Federation. Since this project and its ilk were not advancing projects, by and large, it remained in the field of expected results, not benchmarking practices.

The discussion of the robot tax, informal education and the value of human capital are of concern in the indeterminate equations of digital

education. Although pedagogical discussions on the topic of the "digital footprint" frequently come down to a discussion of the use of digital technologies in teaching, many teachers around the world have been keen on robotics and attract students to this work. Yet, it is necessary to think from the point of view of a new critical thinking vector whom this robot is to be "fed" by. The answer is that there is still an important topic of discussion about the digital world, and this is the topic of taxes, such as robot tax. Some financiers call to curb robotization by introducing a tax on every used robot. Incidentally, such an idea was also put forward by pedagogical unions, but almost always it was nothing more than a call. However, in a number of countries, such as the USA, Canada, Japan, there were influential supporters of this opinion. For example, Bill Gates, the founder of Microsoft, has repeatedly expressed the view that if a robot performs duties on a par with a person, we need to think about taxing his work at the same level as human labour.

The educational opportunities of billions of people connected to each other by digital mobile devices with gigantic power and memory, providing access to all the knowledge of mankind through the worldwide Internet, are truly limitless. However, the openness of education and its structural character have now determined and will determine in the digital age formal or informal trends in the continuity of knowledge [5], the individual's ability to reflect on his intellectual abilities and, what is important, limitations.

A new classification of continuing education forms adopted by UNESCO [3] meets these measurements. The psychological paradox in the digital world of opportunities is the appearance in this classification of a new dimension of education – the so-called informal education, which is outside of any form and directed deep into the person and his knowledge of himself. Following the modern vector of the world economy development, dictating the need for formal and non-formal education, it is necessary to pay attention to the thorough education of a person who has not lost interest in knowing his own inner world, while being capable of critical thinking, deep reflection and constant search for the meaningfulness of his life events. This factor of the psychological measurement of time in the digital age is its distinguishing feature [10, 11]. As for the crisis events, they added uncertainty and a number of unknown quantities.

One psychological vector is the vertical of the speed of the digitalization process, and the second psychological vector, horizontal, is the per-

son's search for himself and the necessary competencies for life in the digital space. In this case, psychologically justified are such key points of state development programmes as creating an ecosystem of the digital economy in which effective interaction is ensured, including cross-border interaction, the creation of necessary and sufficient conditions of an institutional and infrastructural nature, the transformation of traditional sectors of the economy, and the formation of a creative society to ensure transition to the knowledge economy [8, 9]. Certainly, in the first place it is important to pay attention to competency-based training and staff assessment, and training, in our opinion, should be carried out in the format of benchmarking practice. As for the socio-psychological training of highly qualified personnel, it must be effectively carried out in the context of a review of the 21st century education philosophy as a whole, taking into account today's uncertainty in understanding the future. On the one hand, we are surrounded by more and more machines and robots, digital format technologies, and on the other hand, the value of human capital, human contact and human creativity, the significance of the dialogue with ourselves and our community, reflection of our own inner world are increasing.

With the advent of the concepts of "digital technologies" and the recognition of the importance of the already listed changes that the world, national and regional education systems are undergoing, not only the features of digital technologies come to the fore, but those competencies that teachers and learners acquire and develop in the context of world benchmarking.

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The value of science as a world-view problem in the contemporary culture

Abstract. The paper examines the possible influence of pandemic experience on the image of science that currently exists in the public mind. The authors believe that one of the problems in co-existence of science and the contemporary culture is the decrease in understanding of science and its social value due to the increasing gap between scientific thinking and day-to-day experience. The common practice of processing large amounts of easily accessible functional data, that is typical of the contemporary information society, contradicts to the essence of scientific thinking, which in turn diminishes the influence of science on the public mind. The authors provide research data illustrating the identified trend. A relatively low level of understanding of the essence of scientific work in the society can pose risks related to making managerial decisions of insufficient quality when dealing with the arrangement of scientific institutions and activities. The pandemic experience that clearly demonstrated the efficiency and significance of science in solving social problems can play an essential role in restoration of the public prestige of science.

Keywords: science, value of science, public mind, anti-science attitudes, worldviews in the contemporary society

Introduction

One of the unforeseen challenges that science faces in the information society (the information society being a form of the industrial civilization that is supposed to be scientifically

oriented) is the relative decrease in the understanding of the nature of scientific work, of its importance and value, which is typical of the public mind.

The issue was first in the focus of scientific research at the beginning of 1990s when the initial large-scale surveys on the level of scientific awareness of general public were conducted. The most widely-known were the surveys conducted by J. Durant and J. Miller in Great Britain and the United States, that were focused, firstly, on the basic level of scientific knowledge (e.g., "Does the Earth go round the Sun? or Does the Sun go around the Earth?"), and secondly, on the understanding of essential characteristics of scientific work and scientific criteria (e.g., through establishing a link between the reliability of knowledge and its empirical verification). The list of questions composed by J. Durant later became a base for further research conducted in a number of countries. A research of this kind was carried out in Russia in 2002 and 2013 by the Russian Public Opinion Research Center.

The research revealed a rather low level of scientific awareness of the general public: varying from country to country, only 3% to 7% of all respondents gave correct answers regarding the basic scientific statements. Added to that, people didn't have adequate ideas about methods of gaining the scientific knowledge. In particular, J. Durant pointed out that only 3% of respondents were able to establish links between science and the empiric verification of theoretical provisions [1]: when asked to name problems studied by physics or chemistry, most participants described both sciences as being mainly technological ones. Furthermore, in public opinion a science was often linked with spheres of knowledge that are actually kind of parascience: for example, astrology was more often thought to be a science than history, economics, or psychology [2]. Finally, B. Wynne identified the wide-spread indifferent attitude to science based on the belief that scientists deal with abstract matters that have nothing to do with real life and, therefore, are not related to anyone's personal experience. B. Wynne named the phenomenon "bracketing science" [2]: on the one hand, the wider an issue is discussed by the public, the more the scientific aspect of such discussions faints; on the other hand, when scientific achievements actually determine our lives routine, people fail to directly link their ordinary experience with results of previous scientific research.

From the very beginning of the research an unexpected pattern was identified: the more technologically developed a nation was, the more

distinct the described trends were, compared to those nations where the information society did not become the reality at that period [3]. The surveys conducted over the two following decades clearly demonstrated a trend: along with the scientific and technological progress the gap between the public mind and science enlarges, and the alienation between the society and science increases. At present, the integrated findings of longitudinal studies allow us to conclude that in the technologically developed countries a large part of population (probably about 70-80% [4 p61]) does not fully understand the essence and nature of science. In 2016, the Committee on Science Literacy and Public Perception of Science at the National Academies of Sciences, Engineering, and Medicine, the USA, identified the following unsolved problems within the complex issue of public perception of science: "(1) the understanding of scientific practices (e.g., formulation and testing of hypotheses, probability/risk, causation versus correlation); (2) the content knowledge (e.g., knowledge of basic facts, concepts, and vocabulary); and (3) the understanding of science as a social process (e.g., the criteria for the assignment of expertise, the role of peer review, the accumulation of accepted findings, the existence of venues for discussion and critique, and the nature of funding and conflicts of interest." [5, pS-2].

However, the issue of inadequate image of science in the public mind is not only a problem of social discourse. The dominant image of science in a particular culture affects the choice of science as a sphere of potential employment and, therefore, determines the level of professional competence of people who just begin their professional careers. The image of science also influences the general attitude to education, the understanding of how the future professional career depends on the educational training and on the ability to gain scientific knowledge through formal education. Moreover, even the government policies related to both science and the need for scientific expertise in solving various social problems are influenced directly by the public image of science because politicians' attitudes to science depend on the public opinion (that is enlightened in the best-case scenario). Broadly speaking, the initial attitude to science determines the level of critical thinking that exists in the public mind, being developed due to the presence science. If a society is alienated from science, the scientific standards of thinking deteriorate being eventually replaced by converted forms ("verwandelte Form") in the public mind. The foregoing demonstrates the urgency of the issue of public perception of science that is an essential worldview

problem of the contemporary culture and, therefore, deserves a philosophical reflection.

Literature review

The research of the status of science and academic careers in the Russian society started in 1990s. The first step was S. A. Kugel and I. A. Maisel's article [6] published in 1992 that called for a study of a wide range of pro-science and anti-science attitudes existing in post-Soviet Russia as well as various reasons for the development of such attitudes. Since 1995, Scientific Research and Statistics Center within the Ministry of Education and Science of the Russian Federation conducted regular surveys on the subject. The main fields of research included the perception of results of scientific work by the Russians, their attitude to scientific work and scientists, the beliefs related to the social functions of science (the survey results can be found in [7]). Empirical studies were focused on such issues as: the level of public awareness of basic scientific ideas and the cutting-edge scientific research results; various indicators of the social status of science including the willingness of young people to choose science as their future profession; the public opinion on the need and sufficiency of scientific research financing; the public attitude to Russian scientists who decided to pursue a scientific career in foreign countries, etc. [8]. A number of social philosophy studies considered various factors that influenced the formation of the public image of science, from the initial perception of science as a form of knowledge brought to Russia from European countries [9] to its biased coverage in Russian mass-media [10]. Attempts were made to systematize the empirical observation data and to identify common trends in the transformation of public ideas related to science in Russia, which was also reflected in thesis papers [11, 12].

From the very beginning the empirical research revealed the urgency of the above-mentioned issues in Russia, as the changes in the role and status of science due to technological transformation occurred simultaneously with the dramatic reforms in all social spheres. During the perestroika period, the role and functions of key social institutions were being reconsidered, and the whole process was rather competitive. The degree of public understanding of science proper, of its importance, and of the different aspects of its value for the society varied significantly during that period. A number of traditional grounds that previously determined the place of science in the social life suddenly lost their influ-

ence. One of the new factors forming the image of science was the need for its active social positioning which was not typical for the Russian scientific tradition in earlier periods. As a result, the gap appeared between the actual situation and the public perception of science that seemed to be relatively negative [13]. The science-related stereotypes formed under such circumstances gradually filled in the information lacunae existing at that time, without any alternative provided, therefore the stereotypes became very persistent. Even today those stereotypes are sustained in spite of all reforms carried out in the scientific institutions management sphere, the related changes in the government policies, and the relevant authoritative discourse. Moreover, the gap between public perception of science in general and the Russian science in particular could be identified: although a positive general image of science existed in the public mind, the Russian science of the described period was evaluated more negatively by a number of parameters [14]; the disproportion still exists nowadays.

The development and use of the system of science status indicators allowed researchers to identify a number of issues related to the existence of science in the contemporary society in Russia. Surveys conducted on the basis of J. Durant and J. Miller's questionnaires revealed a relatively low level of scientific literacy: in 2013, Russia took the 28th position among 38 participating countries according to the percentage of correct answers [8, p36]. Various studies that dealt with the comparative assessment by the public mind of the scientific character of certain fields of knowledge repeatedly demonstrated the popularity of para-science in contemporary Russia, the inclination of Russian public to think of various forms of para-science as of scientific ones. Thus, a conclusion was made about the insufficient understanding of the nature of scientific knowledge and the standards of scientific thinking [15]. The statistical analysis of the scientific research funding in Russia (during the 2010s it was at a relatively low level of 1.1% of GDP [16]) correlates to the stable idea of under-financing of science in the public mind; in fact, such point of view was expressed by more than a half of respondents in Russia, which is significantly higher than the world average [8, p35]. This resulted in the wide-spread idea of "underachievement" associated with science as a field of work. The dynamics of changes in the Russian public attitude to the "brain drain" issue was inconsistent, but the general inclination to interpret the issue as a matter of personal choice was revealed [17], which indirectly proved the public unwillingness to per-

ceive science as a vitally important resource. Researchers also identified the gap between the positive attitude to science declared by the survey participants and their actual indirect evaluation of the importance of science. A.V. Yurevich points out that the most indicative example is the desire of parents for a scientific career of their children in the future [18]. According to the research, the number of opponents of such a decision in Russia was higher than the number of the proponents (such a trend was identified by surveys from 2005 to 2011). In the USA, e.g., the proportion of those who supported the scientific career choice over a comparable period (2001-2012) was 80% or above, while the opponents share did not exceed 1% [8, p25]. The declared positive assessment of science in Russia seems to be a stereotyped answer representing a kind of inertia, while actual public attitudes have already changed.

Research methods

Since 2008, we have annually conducted a local research of an aspect of the reviewed issue based on the author's own methods. Every year the reference group were our university students taking a standard course in Philosophy. While studying "The Cognition Types" within the Epistemology section of the course, students learnt about the logical and methodological characteristics of the main types of cognition identified according to the Russian epistemological tradition, including the scientific, the ordinary (everyday), the poetic (artistic), and the practical types. Students were explained that knowledge is acquired through a particular type of cognitive activity, therefore it is classified according to a relevant type of cognition. As a final task, students were offered to make a pie-chart that would represent, from their personal point of view, the percentage of their own knowledge that belongs to each above-mentioned type. They were also asked to provide comments on their decisions and to give examples of each type of knowledge, e.g.: "I know that milk does not get sour if kept in the fridge" (ordinary knowledge), "I know what measurements I need to take in order to make a skirt" (practical knowledge), "I know that the molecular basis for genes is deoxyribonucleic acid (DNA)" (scientific knowledge), etc. Students were then asked to write and submit their papers according to the task. From 2008 to 2020, a total of 410 students took part in the research. Within the philosophy course, the aim of performing such a task was to help students systematize the gained knowledge on their own. The analysis of papers from the social epistemology point of view allowed us to mon-

itor the changes in students' self-assessment of the amount of scientific knowledge acquired, as well as the appropriateness of the examples of scientific knowledge provided by students. It should be underlined that the research determined not the percentage of scientific knowledge actually gained by students, but the students' own assessment of that percentage.

Results

The research showed that the importance of science from students' point of view was diminishing over the reviewed period. In 2010, the proportion of scientific knowledge compared to all other types of knowledge amounted to 26%, which was quite a high percentage, taking into consideration that the ordinary (everyday) knowledge was thought to account for 36%, and the practical knowledge for around 16%. A number of students also emphasized the significance of poetic (artistic) and religious types of knowledge. When asked to explain the importance of scientific knowledge among all other types, students provided the following comments: "I gained scientific knowledge at school, and I continue to gain it at university", "The purpose of education is to obtain the objective knowledge of the world", "Today is time for science", "You can't be successful without knowledge nowadays", etc. Many expressed understanding that the scientific knowledge proper is the base for university training in general; they also felt that people gaining higher education learn "more and more day after day". It was repeatedly pointed out that in the future the proportion of scientific knowledge in the professional training at university would increase. Two students out of 38 respondents indicated that they were reading science books, one student mentioned watching educational documentary films. When respondents were asked to make statements giving examples of scientific knowledge, 20% of the statements were related to mathematics, others often included examples from academic disciplines students were studying.

In 2018, 75% of respondents were doing a 4-year course for a bachelor's degree (compared to the previous period when most of the participants did a 5-year course for a specialist degree, the difference is due to the reforms in Russian higher education). On average, the participants estimated 21% of their knowledge to be of the scientific type. Along with statements about the link between science and education, another type of answers appeared, e.g., "I do not often use my scientific knowledge", "I mainly need scientific knowledge when preparing a report or writ-

ing a paper", "I need it (scientific knowledge) only at university", "I can't say I know a lot – I remember something and forget something". Only one student indicated that, apart from educational activities, science is necessary "for understanding natural and social phenomena". The non-fiction literature was mentioned only once: "When I was a child I used to read about dinosaurs, and that is kind of science". The examples of scientific knowledge became completely different, including mainly information learnt at secondary school, e.g., "I remember the multiplication tables pretty well", and some interesting facts that teachers used at school to illustrate the laws of science but that were kept in students' memory as scientific information, e.g., "A bridge will be destroyed if a detachment of soldiers marches across it". A number of examples from university subjects being studied at the period were mainly related to the applied sciences: "I know how to define company values and why they are useful" (course in Personnel Management). It should be pointed out that in 2018 only 6 out of 36 respondents gave examples of knowledge gained at university. Some answers referred to the process of teaching and learning, and not to its results, e.g., "We learnt about integrals at university". In two cases, philosophic attitudes were suggested instead of scientific truth: "I know that there are no accidental events because everything has its cause", "I know that life is complicated because everyone has to make choice". Moreover, one example was incorrect: "The speed of wind is 300,000 km/s". We can assume that, together with the increasing proportion of practical knowledge (up to 24%), the described trend represents the partial alienation from science which is typical of the present-day students: the idea of science as a field of activity existing somewhere far away from the ordinary life and, therefore, not really necessary for ordinary people. Actually, this is "bracketing science" described by B. Wynne: students perceive studying university subjects as the transfer of practical or applied knowledge instead of scientific (which is true in a number of cases). Moreover, they are often unable to notice the scientific base of modern technologies and applications. The habit of perceiving science as a collection of curiosities and interesting facts, which seems to re-establish in the public mind, is rather illustrative in this regard. "There are no two identical snowflakes, fingerprints, or irises," – such a statement is quite typical of "the new Middle Ages". As we know, in the medieval times one of the main tasks of science was the search for wonders and curiosities.

Discussion

In the contemporary society the science as a part of culture has faced new challenges that appeared in the spheres where the value of science seemed to be undisputable due to its role as a base of scientifically oriented technological civilization.

Practical activities in the modern society, being characterized by an increasing intellectual level and the continuing diffusion of new technologies, eventually resulted in the formation of a certain type of knowledge – the so-called special practical type – that has grown to the amount at which it starts to compete with the scientific knowledge proper. The special practical knowledge is developed and acquired through specialized practical activities, it comprises the knowledge of ingredients, techniques, and theoretical foundations for such activities [19]. Practical knowledge in a particular field is, on the one hand, the accumulated practical experience, the collection of techniques that implies the awareness of "how to do or make something" and "what is the best way of doing or making something". On the other hand, it is characterized by a limited theoretical base while having the ability to work out its own terms or categories, and to fix regularities. This kind of knowledge cannot be classified as scientific due to the absence of a number of functions that are typical for scientific knowledge. Most importantly, it cannot explain phenomena on the base of universal regularities through the construction of a comprehensive picture of a sphere of reality in question. In fact, such field of knowledge often uses achievements of the basic sciences as its own grounds (e.g., human resources management uses theoretical models developed by psychology). The increasing complexity of some types of practical activities and the emergence of new professions resulted in the situation when the standard ordinary experience became unable to satisfy the need for job qualifications that required specialized complex knowledge. The necessity to acquire complex knowledge through specialized professional training led to its public perception as being a kind of science (so it is possible to find a faculty of "culinary science", a discipline of "efficient sales science", majoring in a "funeral science", etc.), which, in turn, leads to deformation of the image of science in the public mind. Therefore, science is thought to be similar to any other type of intellectual activity. Moreover, the positioning of such types of activities as being self-sufficient and equal to science generates a public belief that the science proper is separated from our everyday experience, therefore we can do without it.

Intellectual work skills, that are in demand in the information society, contradict to some degree to the scientific thinking tradition. The information society requires the skill of processing dynamic information flows which implies looking for and sorting out data that is relevant to the current task, the skill of collecting large amounts of data and getting rid of it quickly in order to switch to completing another task, the ability to simultaneously process a number of messages. However, the scientific work requires not the data processing skill, but the relevant skills of obtaining knowledge, i.e., the ability to identify and formulate a problem, to consider the first hypothesis and to go on to another one looking for an alternative explanation, the ability to establish logical links or links between objects, the ability to proceed from a phenomenon to its essence and further to the essence of a deeper level, to summarize and draw conclusions, to identify the implicit relatedness of processes under study, to extrapolate ideas to new spheres of research. The skill of quick search for information does not support the scientific style of thinking, moreover, such practice hinders the formation of scientific style. Meanwhile, people who are used to easy access to information find it difficult to notice that their personal knowledge is not sufficient for making an individual contribution to the field of research.

The transformation of science into a social institution, that operates within the established forms of social organization, creates a tendency toward the regulation of science with management tools that are common for different social structures, e.g., the use of managerial criteria and techniques. However, the essence of scientific work is a creative move towards fundamentally new intellectual findings that resists external control or management. The use of quantitative performance indicators for the scientific work assessment makes scientists spend a lot of time and effort on presenting the achieved results according to the standardized requirements, which does not add to the research. Moreover, such practices lead to the formation in the public mind of wrongly understood criteria for the perception of scientific work. A survey on the ideas of young scientists about the essence of science, that was conducted under the auspices of the Council of Young Scientists of Russia, revealed quite an interesting point in this connection [20]. According to both the respondents and researchers, at the beginning of their scientific careers young people obtain information about the development of science from such sources as "social networks or blogs", "personal contacts with lecturers and tutors (including participation in scientif-

ic projects or grant programs)", "public scientific discussions (scientific conferences, young researchers training sessions)", as well as "special formats of presenting scientific information to the general public (a lecture-performance, a scientific coffee-bar, etc.)" [20, p201]. It should be pointed out, that the respondents did not mention such traditional ways of gaining scientific knowledge as formal education or reading scientific literature; they also did not mention the necessity to generate scientific knowledge through a scientist's own effort. The respondents were ready to obtain "scientific information" while taking part in public events (preferably of up-to-date format), and later to present the received information spectacularly at another similar event; they did not even suggest that scientific work may involve other activities.

In relation to the described trends, the transformation of reality experienced by the humankind due to the coronavirus pandemic can become the initial point for bringing the true understanding of science back to the public mind. The struggle against pandemic has most obviously demonstrated to the public that there is no efficient alternative to science, at least in dealing with a number of urgent issues. It also showed that a reliable scientific solution to a problem should be found prior to setting government policies or making management decisions, which, in turn, is possible only due to the sustainable development of science. However, this cannot be achieved only through immediate massive financial resource injections. Finally, the scientific research that is not in the social focus today may turn to be of great practical importance tomorrow.

Conclusions

The value of science is not only in practical achievements that become possible on the base of scientific research and development, and even not only in creating a large amount of theoretical knowledge about the universe and the human. The value of science is in the cognitive attitude to the world that is formed by science, i.e., the objective research aimed at achieving the truth, whatever it could be, through making numerous small discoveries, in order to gain systematic understanding of the world as a whole organized in accordance with the definite laws of nature. The vital significance of science as a systematic way of thinking during the social fluctuations and disturbances of our times was often outweighed by particular issues and values, which in turn began to pose risks for the development of both the science and the society as a whole.

When social crisis situations occur, they often lead to the comprehensive revision of a value system. The ability of nations to cope with the new pandemic was directly linked to the place of science within the existing social systems [21]. Thus, the current situation creates the grounds for a rediscovery of vital importance of science for the existence of modern civilization. The window of opportunity will not be used to its full extent if the public understanding of the situation is limited to the enhanced authoritativeness of particular fields of knowledge based on their practical usefulness and to regarding certain scientific achievements as tools of political influence. For many people in the world the experienced lockdown, that lasted several months disrupting everyone's usual dynamic lifestyle, became the time of rethinking the attitudes to many aspects of social being and the understanding of what is really important for a human life. The philosophy's function of forming a worldview is often performed not only through discovering the new truth, but through reminding the mankind of things that can be easily overviewed in the hectic flow of everyday life while being vital for the human existence. We believe that at present a really challenging task for philosophy, that is considered to be the medium able to correct social worldview, should be the work aimed at bringing the idea of utmost importance of science back to the public mind, so that science was regarded not only as a tool for solving practical technical and social problems, but as one of the greatest achievements of human mind.

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Resonance co-creation of time and meaning of European informal pedagogy

Abstract. In this article the authors reflect on time as a psychological category, a subjective and creative category, on the meanings and possibilities of the creative process and its psychological and psychotherapeutic effects on the individual. A new direction of European informal pedagogy of creativity is proposed for reflection and use

Keywords: resonance co-creation, measurers of spatiotemporal structure, psychoanalytical psychotherapy, kuns (art) therapy, informal pedagogy of creativity.

This article exists in few versions. One of them presents basic postulates of our discourse about dimension of time and resonant co-creation in details.

It seemed quite easy to remind you that classic natural science measures the time by physical coordinates: present, past and future; year, month, day, hour, minute. But we will venture to introduce another dimensions /measurers/ of spatiotemporal structure. And we would like to "commit a minor revolution" and suppose that time can have informal psychoanalytical measurers based on indexes of art images and creativity.

Our discourses are based on philosophical works of the German scientist Jean Gebser [3] and latest works of Georgian philosopher Merab Mamardashvili [4]. Their works are based on thesis that "time is the phenomenon of psychic", and "space is a structure of consciousness".

We will appeal to the psychology of creativity and art, psychoanalytical psychotherapy, kuns (art) therapy /Kuns – in German/ and psychology of art.

We would like to find answers to the following questions:

- What are other dimensions of time except physical?

- How are individually significant events for person reflected and captured in pandemic time?

- Can the time be psychological category, or subjective and even creative category?

- What can art, artists, art therapists teach pedagogy?

Our relation to informal pedagogy of creativity is closer to cultural theories that able to connect with applied psychoanalysis.

Psychoanalysis being appeared a long time ago in Vienna overstepped Austrian boundaries and became heritage of world culture. But international spread and development of psychoanalysis led to misunderstanding. And it got in touch with absolutely not political structures all over the world.

There weren't Sigmund Freud, Karl Gustav Jung and Jacques Lacan as well as classical for European civilization idealistic philosophy of Immanuel Kant and Georg Wilhelm Hegel, existential therapy of Viktor Frankl, vertex philosophy of Karl Jaspers and Martin Heidegger in many pedagogies of the world. But scientific schools of Vladimir Bekhterev and Leo Vygotskii together with European scientific schools of Hippolytus Bernheim and August Forel were overcoming barriers of misunderstanding of psychoanalysis /and psychoanalytical dimension of time as well/.

All this determined the school of inspired and creative European informal pedagogy. These directions exclude art history analysis and pay attention on pedagogical and psychological. Main idea is that creation is in the avant-garde of mental evolution of man.

Art became a mediator between timelessness of unconsciousness and fixed time in human's consciousness. Man lives in concrete physic time and measures it by simple conscious sensations that give him feelings like color, sound, touch, smell, taste, pleasure, displeasure, joy, fear, surprise, anger, etc. Complicated processes of morality, religiosity, intelligence and esthetics formation pass in conscious. All these are fixed by a man in past, present or future. His time is focused on logic /discourse, critical/ comprehension of his life experience but creative esthetic intuition of human and his ability to learn in a creative environment plays not less role.

Art symbol, allegory and image are language of creative intuition. Creation process is like unknown and non transformed world, like timelessness and our psychic mysterious state. Time "goes out" of fixed order. Feelings and mind of educator and student stop independent existing. They are combined in something another that is much stronger than mind and much delicate and spiritual than feelings. In such a moment man becomes capable to correct relation to his life practice /experience, psychoanalytical biography/. We call this practice in European informal pedagogy - resonant co-creation.

Resonance Co-creation method "MRC: Resonante Cokreation: Sibgatullina I., Gruessl S." is the author's method. The results of this method practicing prove psychoanalytical significance of art and the possibility of applying it to the informal pedagogic practice. Artist, analyst and teacher combine their efforts and dialogue about life time dimension / person's psychological biography/ person's reflecting on own experiences. Time is being measured by images, meaning, color, form and meaning again [5, 6].

In one of the works of 1895, Sigmund Freud, the founder of psychoanalysis, called this supernatural state of creative (esthetic) intuition "Cleaning the chimney". In 1909 he called it therapeutic idea. Finally, in 1933 he put the art and deep psychology on one values level /of therapeutic process/. This was later recognized by many European scientists [2].

In this interpretation, time acts as a measuring object of art, and art as the subjective dimension of time. Informal pedagogy is just mediator and plays secondary role in resonant co-creation.

By the way we'd like to pay attention that barriers of misunderstanding between of creative theories and the method of resonant co-creation persist between educators and psychologists are being saved till now.

In the psychoanalytic dimension of time "the formula of retrospective echo works". It means that the present have influence on the past. This means that some event may happen to a person that would not make sense for him at the moment. This event just "leaves its mark on the psyche". This "mental matrix" will get re-awakening in retrospect. After some time another, more or less random event suddenly will give a new meaning to the events of the past. Freud called it "Nachtraglichkeit" that means the value of deferred action.

Emanuel Victor Frankl in speech therapy called it "new opportunities in understanding the meaning." [1]

But and educators, and psychologists, and psychoanalysts using the category of timelessness, in relation to the creative process, remind that dream and memory are the symbols of what once happened, wake is an image of what must be done and man's awakening to life is that neutral moment (!) when he can capture and express this opposition.

This is a time of transition to another, conscious existence, the moment (!), to which not everyone educator is ready, but his movement within the limits of individual time had already begun. The pandemic has set boundaries for us. Creativity is pushing those boundaries.

The purpose of this short article is to stimulate readers to think, to reflect, to act, to develop...

We invite you to Vienna at the Institute for intellectual integrations / https://www.rbs-ifie.at/ for the professional development program "Resonant co-creation method in informal pedagogy and psychology".

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Psychological and social problems of benchmarking in online education

Abstract. Cardinal transformations of higher education, due to the development of information technology, led to the development of online learning. New forms and methods of teaching require new methods for assessing the effectiveness of online education. The authors discuss the possibilities of benchmarking as a learning performance management tool for adapting universities to innovative changes.

Keywords: benchmarking, higher education, online learning, e-learning, comparative analysis.

The emergence of the Internet and the Web has led to a most important transformation of higher education. The shaping of online studying is a necessary change. E-learning technologies make it possible to make higher education accessible to any person. Amid continued growth in online education, education stakeholders continue to demand more accountability and evidence of teaching effectiveness. Research in this area tends to focus on whether online education is as effective as full-time education in achieving learning outcomes. And usually concentrated in three areas:

- assessment of the results of students in points;
- the attitude of students to learning;
- student satisfaction with distance learning.

However, comparing traditional forms of education and e-learning, one can come to the conclusion - instead of reproducing what is being done in a familiar classroom, it is necessary to focus on identifying and applying what works well in a virtual environment.

Objective evidence of learning effectiveness continues to be important for all stakeholders, including students, faculty and institution of higher education. Though, in order to give a real assessment of online education, it is necessary to go beyond these boundaries and take into account the quality of education in general.

Educational technology based on the widespread use of the Internet have come to the fore in business and academia over the past few decades. Online learning and increased use of networking technologies and digitalization in society have been discussed in terms of representing major changes in modern learning, but the impact, significance and implications of the new paradigm in higher education have not yet been extensively discussed.

The rapid growth of information technology has influenced the way education is carried out today. In connection with the avalanche-like development of Internet technologies, online learning has become a new paradigm in modern education. E-learning has many benefits, including free interaction between learners and teachers, or between learners and learners, and the absence of time and space constraints. Other benefits of such training include the ability to provide education at reduced costs and increased access for people with disabilities due to physical and geographic barriers. These are important driving forces, especially for adult learners who want to keep their jobs and continue their studies in any educational institution using modern technology. Therefore, universities need to scale up their online learning capabilities to keep pace with rapidly changing education technologies. And many universities are actively introducing advanced teaching technologies. Though, investments in the development of learning management systems, e-learning infrastructure and course content are costly. At the same time, a variety of Web 2.0 technologies such as podcasting, front-end frameworks, wikis, and other social networking tools are widely available to individuals. The emergence of many Web 2.0 tools and the continued use of outdated technologies have called into question the effectiveness and efficiency of these technologies.

However, it should be borne in mind that students are ready for more activity in the virtual space, although there is evidence of a teacher-centered and content-centered approach to e-learning. Already many universities have used information technology as their main cost-cutting strategy and, at the same time, to support initiatives to promote student-centered flexible learning and quality improvement.

However, the majority of students perceive the sites of learning management systems as information storage, and all the advantages and potential of such systems are not realized. Students demand more than just dumping a repository - they demand active and enthusiastic teachers. The results show that online learning is teacher-centered. Trainers are key stakeholders in determining success.

Universities should pay more attention to key stakeholders, students and academic staff, and develop the widely recognized potential for online learning. Teaching staff must engage with technology to drive innovation, and universities must make an effort to improve the learning of their students as a high priority and support it in practice.

For most higher education institutions, the desire to learn from each other and share best practices to improve academic performance through collaboration or comparison with other universities is nothing new in higher education. New is the growing interest in formalizing such comparisons. This is where benchmarking comes in. Benchmarking is a common quality assurance and improvement technique that is often used across sectors.

The concept of "benchmarking" comes from the English "benchmark" (benchmark, criterion, standard). The use of a benchmarking method developed in the business environment and applied to the higher education system can be more effective. The idea of benchmarking is based on the fact that the outside world is in continuous development and consists in comparing its own organization with one or more organizations defined as benchmarks in a certain area. By choosing the performance of companies that have achieved special results in a particular area as a comparative element, and comparing them with its own results, the division that used the benchmarking analysis has the opportunity to find the most appropriate methods of acquiring practices, improving the efficiency of its own company, and increasing competitiveness.

Confusion should be avoided between the benchmarking process and the control process. Control provides us with important information about an organization, while benchmarking can tell us what is behind that information, helping an organization to improve its position, so benchmarking can also be seen as an indicator of deteriorating competitive position. The role of benchmarking in public universities is to investigate the processes, concepts, methods and strategies of successful universities and to transfer the most favorable elements from the analysis to their own institution.

Formalizing university comparisons is an important element of higher education. Benchmarking in higher education can be a tool used in ranking universities, as well as to stimulate competition in higher education, for the most accurate and objective assessment of the current state. Benchmarking has been proven to be about seeking excellence in a specific field of activity, leading to superior performance. It is important both for university marketing, as it can foster quality growth and productivity gains that are conducive to the labor market and scientific progress.

Benchmarking for online learning has been developed internationally. However, the comparative analysis of online learning is in its infancy. In higher education, benchmarking tends to be very process-oriented and its use by universities is usually not strategic.

Benchmarking in higher education attempts to answer the following questions: how well a university is doing in comparison to others, in what areas and how good the university is, at the university as a whole, which part of it works best and how it does it, how universities can implement in its practice what it does well in others, how does the institution improve its performance while maintaining its unique characteristics, and how, in the long term, can a university be better than the best university in the context of its own mission?

In online learning, the quality of teaching materials is often viewed as an indicator and criterion for quality education. In the networked world, there are demands for new roles and responsibilities in learning and education. Accordingly, quality must be viewed in relation to this new environment and educational paradigm.

A quality management framework for distance learning was proposed back in 1995. The framework was built around four dimensions: products (e.g. teaching materials, competency fulfillment, passing score, etc.), services (feedback and recommendations, student achievement support, enrollment, career and consulting services), processes (support for products and services, record keeping, delivery systems, inventory planning and inventory control, and quality assurance procedures) and an overall philosophy (i.e. policy, mission, statement, ethos, attitudes and culture). For example, the Institute for Higher Education Policy (IHEP 2000, USA) conducted research that identified 24 quality criteria for e-learning, divided into seven groups: institutional support, course development, teaching and learning, course structure, student support, teacher support, and appraisal and appraisal. The ISO / IEC

standard (2006) also regulates the international concept of quality in e-learning. These processes cover all e-learning application scenarios such as content and tool creation, service delivery, training, monitoring and evaluation, as well as lifecycle stages, from continuous needs analysis to continuous optimization. It is a general framework that includes a quality model, reference methods, metrics, best practices, and implementation guidance.

Benchmarking in higher education was created as a tool for Improvement of quality management in higher education and making progress in institutional reforms, increasing operational efficiency and adapting to innovative changes in order to meet new challenges in the educational environment.

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Resonant mechanisms of region branding in strategies for sustainable development

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Abstract. The contribution of universities to the promotion of regions is a topic that has been attracting more and more attention lately. Increasingly, universities are expected to not only engage in education and research, but also to play an active role in the economic, social and cultural development of their regions, ensuring sustainable development. The role of higher education institutions in creating the resonance of the region's brand is discussed.

Keywords: region branding, brand resonance, university, sustainable development.

The goal of region branding is to promote sustainable social and economic development, which will make the region more attractive to authorities, migrants, tourists, investors, local residents and other stakeholders. Region branding is not much different from a product branding or service. The region must have something that is distinctive and attractive to stakeholders. The branding process must compromise the competing needs of diverse stakeholders. Many stakeholders and emotions are superimposed on diverse interests and levels of perception. The region's brand applies not only to people,

culture and heritage, local businesses and their products, but also to tourism, trade and investment. That is, he can appeal to an internal audience, for example, to the population, to local firms, and to an external audience - exports, tourists.

A study of the growing number of publications [1, 2] by various authors confirms that general principles of marketing can be applied in order to increase the competitiveness of regions. As a result, regions are increasingly perceived as brands. The dissemination of research on regions branding is linked to the policy of decentralization, according to which greater powers are given to regional authorities to ensure sustainable development. In addition, international competition between regions has intensified to attract investors and tourists. All this forces the regional authorities to pay more attention to the policy of creating and promoting the brand of the region.

Some regions are already using their traditional virtues by promoting local culture and products, or developing local identity strategies to attract investors and foster internationalization. Their regional governments continue to ignore the participation of some stakeholders, such as universities, in regional communities. As well as the participation of local residents in the activities of universities.

Other regions have turned to more informal types of regional competitiveness and, in particular, to the soft power of intangible assets for the future, in the form of education. In conditions when intangible capital becomes relevant, local universities and their participation in the life of the region are becoming one of the possible ways of regions branding.

Universities play different roles in their regions. Some are centers of learning, research and collaboration with industry to drive innovation. However, regional universities are not everywhere involved in the economic development of regions. Universities can play a more important role in terms of their accumulated knowledge and experience in relation to various stakeholders if they take into account the specific conditions of the home region. And thanks to this, they serve as the basis for sustainable development and increasing the well-being of the population.

Education is critical to promoting sustainable development and enhancing the ability of people to cope with environmental and development issues. [3] It is also important to achieve environmental and ethical awareness, values and attitudes, skills and behaviors consistent with sustainable development, and to participate effectively in decision-making.

In this sense, the idea of education goes beyond the translation of skills required for employment and creates opportunities for the social advancement of various groups of the population. The perceived quality of educational services is an important determinant of brand equity.

Universities play a variety of roles in national governance systems. Three levels of university involvement can be distinguished: individual - by training elite cadres involved in policy development or providers of certain types of knowledge, institutional - for example, acting as a regulator of the perception of digital transformation problems by the regional community, and collective - universities interact to shape science policy, Scientific councils are created in regional governments to interact with universities and collective bodies of universities to determine scientific policy.

Meanwhile, the competitiveness of the region largely depends on the competitiveness and attractions of the home university. Thus, it is clear that the region branding has a close relationship with the marketing activities of the university. The converse is also true, the marketing activities of the university should be in harmony with the marketing activities of its region. Regions should align their tourism destination management activities with the goals of their universities. In marketing, universities and their regions need to work together more actively and more efficiently, as their common interest requires.

Previously, universities were primarily responsible for the dissemination and production of knowledge through academic missions of learning and research, but now they are increasingly taking an active regional position through external community participation. University senior management is often associated with the region through liaison contracts or specific roles in regional bodies. Accordingly, universities play a formal role in which senior management participates in regional strategy formulation structures. The participation of teachers or individual scientists is difficult or controlled. Conversely, if scientists participate in the strategy development process autonomously, then most of the activities are carried out independently of the university leadership. The European experience shows the feasibility of creating intermediary structures that carry out communication between external stakeholders and university staff. For example, technology transfer offices, innovation and entrepreneurial organizations, and research parks help shape a more specialized approach to regional innovation, and in some cases coordinate the work of academics for effective participation. These in-

termediary bodies can be more actively involved in the development of the strategy and the involvement of various actors in the strategies.

Research in the field of regional development has highlighted the need to develop approaches with broader participation in governance. Top-down governance does not necessarily imply solely the economic development of territories, but can also promote sustainable development and social justice and citizen satisfaction through enhanced governance regimes.

Community participation helps stakeholders understand what measures and conditions are required to ensure dialogue. Participants in which, representing the various stakeholders involved in region branding, can rethink their pursuit of a common place identity and the nature of their participation in implementation. Region branding is no longer seen as solely a matter of local government, and providing a framework for collaborative interactions is critical to the success of a region's branding processes and sustainability.

Regional authorities are increasingly focusing on branding tools outside of traditional tourism marketing to ensure equality between citizens, investors and guests. Incorporating branding strategies into a regional development plan provides a set of tools that communities can easily use to better communicate community goals that will drive efforts early in the process. In some cases, engaging in a branding plan can be a strategy for bringing the community together around a common vision. A good community brand is a promise that a place makes to people. It is created over time and is based on the images, feelings and devotion that are felt when people see the image of their community. Tell the story of our communities by properly creating the identity of the regions where we live and work. One way to do this is to incorporate brand building into the economic development process. Whether it's a regional revitalization strategy, city district planning, a community economic development strategy, or even an overarching plan, we engage the public in a process that asks them to dive deeply into their sense of place and hope for the future. the place where they live and work.

Building a region's brand resonance can be thought of as a series of sequential steps.

Brand salience is the degree of emotional engagement in which the region brand appears in the circle of interests of the community, it is a psychological phenomenon that helps participants make a decision about any action based on the perception generated by the brain over a

certain period of time. The visibility of a region's brand means that the brand becomes relevant to interested stakeholders.

Brand performance - measures how well a given region meets the functional needs of its residents.

Brand imagery is how the population thinks about the region brand in an abstract way. It depends on how brands try to meet the psychological or social needs of people. The region brand imagery is also a good way to strengthen the visual identity of the region and its connection with the regional community, investors, communicating the values of the region.

Brand judgments are the personal opinion of the population about the region brand. They can judge a brand in terms of quality, reliability, considerations and excellence.

Brand feelings are the emotional and customer responses to a brand. These feelings can be mild or strong, and positive or negative.

Brand resonance is the hardest and most desirable level to achieve. The resonance of the brand is how much we would like to have a connection with it. This is how someone perceives the values and goals of the regional brand and their values or goals. It is a condition in which the consumer develops strong behavioral, psychological and social connections with brands. Brand resonance is achieved when the population feels a deep psychological connection with the region's brand. Keller [4] divides resonance into four categories: loyalty, affection, sense of community, active participation. Brand resonance creates a high degree of loyalty among stakeholders. They consciously find ways to stay in touch with the brand and share their interactions with others. The importance of brand resonance lies in offering criteria by which brands can measure their progress. In order to resonate, a brand must be perceived as something special in a broader sense. Stakeholders identify with the brand's community, which makes them feel close to other people connected with the brand. Research has shown that behavioral loyalty and a sense of community create feelings of gratitude, strong emotional connections that affect brand resonance.

Engaging stakeholders in addressing and guiding regional strategies can help ensure their contribution to the sustainable development of the region as well as to the success of the region's brand. The region brand is a tool for dialogue between various formal participants and ordinary members of the local community, allowing them to transfer regional values to outsiders. From this point of view, the brands of the

regions can contribute to a more sustainable future, especially from a social point of view concerning identity and cohesion, respect and preservation of traditional values or a healthier living environment.

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Chapter 2

International trends in the development of European universities

PHAIDRA-Services an der Universität Wien. Mehr als Repositorienmanagement

Susanne Blumesberger

Abstract. This article uses PHAIDRA, the institutional repository of the University of Vienna, and the associated services to show how it is possible to take into account questions of long-term data availability and data management in a heterogeneous academic environment. By implementing PHAIDRA, the University of Vienna has developed a comprehensive solution in the area of long-term archiving, derived numerous fields of action from it and developed services for researchers. However, this is not the end of the process, but requires a constant quality review and possibly a necessary course correction.

Keywords: Repository, University of Vienna, research data management, long-term archiving, research support.

Abstrakt. Der Beitrag zeigt anhand von PHAIDRA, dem institutionellen Repositorium der Universität Wien und den damit verbundenen Services, wie es gelingen kann, Fragen der Langzeitverfügbarkeit von Daten und des Datenmanagements, in einem heterogenen akademischen Umfeld zu berücksichtigen. Durch die Implementierung von PHAIDRA hat die Universität Wien eine umfassende Lösung im Bereich Langzeitarchivierung entwickelt, daraus zahlreiche Handlungsfelder abgeleitet und Services für Forschende entwickelt. Damit ist dieser Prozess jedoch nicht abgeschlossen, sondern verlangt eine stete Qualitätsüberprüfung und eventuell eine nötige Kurskorrektur.

Der Start

Als 2006 an der Universitätsbibliothek Wien eine Arbeitsgruppe gegründet wurde um die Implementierung eines digitalen Repositoriums vorzubereiten, gab es kaum Erfahrungswerte, die man heranziehen konnte, das Bewusstsein für digitale Langzeitarchivierung war in den meisten Wissenschaften noch kaum vorhanden. Auch die technischen Möglichkeiten waren nicht sehr breit gefächert, kein fertiges Produkt schien richtig zu passen. Die Lösung, eine Open Source Software wie Fedora, heranzuziehen und nach den Bedürfnissen einer sehr großen und heterogenen Universität zu adaptieren, lag nahe. Als im April 2007 das zunächst für drei Jahre geplante Projekt „Digital Asset Management System" startete, lag die Hauptaufgabe beim nichttechnischen Team an der Universitätsbibliothek Wien spätere Nutzer*innen zu befragen, welche Aspekte dieses neuen Tools für sie wichtig seien. Gemeinsam mit Vertreter*innen unterschiedlicher Fachrichtungen wurde in einer Pilotphase ein Anforderungskatalog erstellt, der in enger Zusammenarbeit mit dem Zentralen Informatikdienst der Universität Wien abgestimmt und verfeinert wurde. [6].

Mit der Implementierung eines Digital Asset Management Systems sollte eine Vielzahl an Inhalten in den Bereichen Forschung und Lehre, die heute fast vollständig in digitaler Form verfügbar ist, langfristig archiviert und verwaltet werden. Am Tag genau ein Jahr nach Projektbeginn, am 16. April 2008, ging PHAIDRA, basierend auf der Open Source-Software Fedora, online. Ziel war es für Lehre, Forschung, Verwaltung/Organisationseinheiten und die einzelnen Akteur*innen die Möglichkeit zu bieten, ihre Publikationsleistungen zu speichern, zu dokumentieren und auf lange Zeit zu archivieren [3]. Gemeinsam mit dem Zentralen Informatikdienst der Universität Wien und mit den Pilotpartnern Universitätsbibliothek Wien, mit dem Zentrum für Lehrentwicklung, der Fakultät für Physik, dem Zentrum für Translationswissenschaft, der Fakultät für Lebenswissenschaften und der Fakultät für Informatik, wurde das System designt und angepasst. Bereits damals war es möglich Dokumente, Audio- und Videofiles, Bilder und Links zu speichern und mittels des Metadatenschemas Dublin Core, bzw. des LOM (Learning Object Metadata)-Schemas zu beschreiben. Wie auch noch heute war die permanente Langzeitarchivierung das wichtigste Feature, neben der

Forderung nach einem raschen und sicheren Zugriff, den unterschiedlichen Verknüpfungsmöglichkeiten der Objekte untereinander, mittels Container oder Collection. Auch auf die Möglichkeit Forschungsoutput so rasch wie möglich open access zu stellen, bei Bedarf aber auch unterschiedlich granular sperren zu können, wurde geachtet. Außergewöhnlich war, dass sämtliche Mitarbeiter*innen und Studierende kostenlosen Zugang zu PHAIDRA erhalten und es ihnen erlaubt wird, zu archivieren, was sie als wichtig erachten. Innovativ war auch Gästen die Möglichkeit einzuräumen mittels eines Gastaccounts ebenfalls Objekte hochladen zu können. Das ist vor allem bei Drittmittelprojekten für eine gut funktionierende Zusammenarbeit unerlässlich.

Viel Wert wurde von Anfang an auf Benutzer*innenfreundlichkeit gelegt, so begleitet seit Beginn eine informative Website PHAIDRA, wo Interessierte Informationen zu unterschiedlichen Themen und Guidelines für den Hochladeprozess finden. Als gute Entscheidung erwies es sich auch, PHAIDRA möglichst interoperabel anzulegen und damit einen Austausch mit anderen Systemen zu ermöglichen. Unverzichtbar, damals wie heute ist die möglichst frühe Klärung von rechtlichen Fragen. Bereits zu Beginn von PHAIDRA wurden Nutzungsbedingungen implementiert, die den rechtlichen Umgang mit dem System regeln.

Um ein digitales Objekt wieder auffindbar zu machen, benötigt man strukturierte Formen der Beschreibungen. In PHAIDRA wurden diese Metadaten - orientiert am LOM-Schema (Learning - Object - Metadata) und Dublin Core sorgfältig ausgewählt, einerseits um Anzahl der Pflichtfelder möglichst gering zu halten und andererseits um eine möglichst detaillierte Beschreibung des Objekts zu ermöglichen. Da sich die digitalen Objekte, die an der Universität Wien entstehen, sehr stark voneinander unterscheiden, wurde auf die unterschiedlichsten Kontexte Rücksicht genommen. Beispielsweise ist es möglich, die Provenienz der Daten abzubilden. Das Ergebnis ist ein sehr flexibler mehrsprachiger - auf Unicode (UTF-8) basierender - Metadatenapparat mit möglichst wenigen Pflichtfeldern aber vielen Möglichkeiten die Objekte detailliert zu beschreiben.

Die Suchmöglichkeiten sind in PHAIDRA sehr vielfältig gestaltet. Man kann sowohl nach den verschiedenen Objekttypen, also nach Bildern, Videos, Audiofiles, Texten, Links, Containern, Collections und e-books, nach Sprachen, Klassifikationsschemata, nach der permanenten Signatur, nach dem Titel, der Beschreibung des Objekts, nach dem Autor und nach den Buchtiteln der e-Books. Zusätzlich können einige Fil-

ter gesetzt werden, die beispielsweise getrennt nach offenen Objekten und solchen, die für einen bestimmten Nutzer*innenkreis beschränkt sind, suchen lassen. Die Suchmöglichkeiten sind miteinander kombinierbar. Objekte, die in PHAIDRA gespeichert sind, werden auch von Suchmaschinen gefunden. Die User*innen erhalten einen Link auf eine externe Ansicht mit den wesentlichen Angaben über das Objekt, über die rechtliche Situation und können das Objekt, sofern es nicht gesperrt ist, auch im Browser ansehen, bzw. downloaden [3].

Sämtliche Objekte, wie Texte, Bilder, Videos oder Audiofiles, können, wie Bücher in einer Bibliothek zu Sammlungen, so genannten Collections, zusammengefügt werden. Diese Collections erhalten wieder einen eigenen permanenten Link und eigene Metadaten und können wie Einzelobjekte – mit Rechten und Lizenzen versehen – weitergegeben werden. Statt zahlreicher einzelner Links zu verschicken, genügt so die Weitergabe eines einzelnen permanenten Links auf eine Sammlung.

Eine andere Möglichkeit der Objektverknüpfung stellen die so genannten Container dar, die komplexe Objekte individuell gestaltbar, präsentieren können.

Die innerhalb des Services "E-Books on Demand" (EOD) digitalisierten urheberrechtsfreien Bücher der Universitätsbibliothek Wien werden in PHAIDRA der breiten Öffentlichkeit zur Verfügung gestellt. Für die Forschung und Lehre bedeutet dies die Möglichkeit orts- und zeitunabhängig bis dahin nicht vorhandene Funktionen, wie z.B. die Volltextsuche, zu nutzen, und Zugriff auf nicht mehr entlehnbare Werke zu erhalten. Im Online-Katalog wird in der Titelvollanzeige der Link zum Digitalisat angegeben. Mittels Bookviewer konnten schon recht bald zahlreiche historische wertvolle Bestände der UB Wien digitalisiert open access zur Verfügung gestellt werden, ein Service, das nach wie vor angeboten wird [3]. Der PHAIDRA-Book-Viewer bietet mehrere Funktionen, es können Einzel- oder Doppelseiten angezeigt werden, der Text kann stufenlos vergrößert werden, es gibt zahlreiche Möglichkeiten des Durchblättern des Werks, man kann auf eine bestimmte Seite springen, im Inhaltsverzeichnis suchen oder direkt ein Kapitel anwählen. Die Bücher sind mit dem Online-Katalog verlinkt, das gesamte Buch oder einzelne Seiten stehen als PDF zum Download zur Verfügung, einzelne Seiten zusätzlich als JPG.

Das innovative Potential von PHAIDRA
Insgesamt ging man schon damals von mehreren Prämissen aus:
1.   Das System ist für alle Angehörige der Universität Wien, For-

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6. Die frei zugänglichen Objekte sind automatisch in Suchmaschinen auffindbar

7. Die beschreibenden Daten, die Metadaten sind auch dann auffindbar, wenn die Objekte gesperrt sind.

8. Es müssen derzeit fünf Metadatenfelder verpflichtend ausgefüllt werden (Titel, Autor, Beschreibung, Sprache, Lizenz).

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10. Die Metadaten sind analog einer CC0-Lizenz frei nutzbar.

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das Urheberrecht und der Owner kann jederzeit einmalig eine Lizenz vergeben.

14.   Die Datentypen waren zunächst Texte, Bilder, Audio- und Videofiles. Mittels Collections kann man Sammlungen aus unterschiedlichen Daten bilden, die zusätzlich eine gemeinsame Beschreibung und einen gemeinsamen permanenten Link erhalten. Container fassen jene Objekte zusammen, die keine eigene Beschreibung und keinen eigenen Link benötigen. Auch permanente Links können gespeichert und mit Metadaten versehen werden [10].

Zwischen Open Access und Datenschutz

PHAIDRA wurde vor allem auch deshalb entwickelt um die Forschungsergebnisse der Universität Wien nach außen sicht- und nutzbar zu machen. Forscher*innen präsentieren somit sich und ihre Arbeit im internationalen Raum. Dennoch erlaubt eine umfassende Rechteverwaltung in PHAIDRA auch den Umgang mit urheberrechtlich geschütztem Material. So ist es zum Beispiel möglich, Objekte zu sperren, d.h. nur für einen eingeschränkten Benutzer*innenkreis zugänglich zu machen. Die Metadaten bleiben jedoch sichtbar, auch eine Suche über Suchmaschinen findet diese gesperrten Objekte. Für sensible Daten wurden im Rahmen der PHAIDRA-Services weitere Möglichkeiten entwickelt, bzw. stehen Sonderlösungen zur Verfügung.

Wer kann PHAIDRA nutzen?

Weltweit freigegebene Dokumente können ohne Registrierung angesehen und im Rahmen der jeweiligen Lizenzen genutzt werden. Alle Mitarbeiter*innen der Universität Wien und alle Studierenden können sich in das System einloggen und Objekte hochladen. Nicht-Angehörige der Universität Wien können einen Gast-Account beantragen. Auf diese Art und Weise können beispielsweise Forscher*innen aus anderen Lehr- und Forschungseinrichtungen, Mitwirkende an Projekten oder Partner an ausländischen Universitäten die Dienste von PHAIDRA in Anspruch nehmen.

Auf- und Ausbau der Handlungsfelder

Zu Beginn von PHAIDRA stand die Archivierung und Langzeitverfügbarkeit von digitalen Objekten im Fokus, nach und nach erweiterten sich jedoch die Anforderungen der Forschenden hinsichtlich des Datenmanagements. Vor allem wurde um Unterstützung vor der Langzeitarchivierung gebeten. Mit der zunehmenden Wichtigkeit der Datenmanagementpläne, bzw. mit der Verpflichtung des größten österreichischen Förderers (FWF Wissenschaftsfonds) nach der Genehmigung

eines Projekts einen Datenmanagementplan abzuliefern, wurde auch deutlich, dass Forschende auch in der Phase vor der langfristigen Sicherung der Daten eine Unterstützung benötigen. Bereits während des Forschungsprojekts, bzw. des Forschungsprozesses müssen Daten sicher archiviert werden und für ausgewählte Personen zugänglich sein, auch wenn nicht alle davon später langfristig verfügbar sein können. Dafür wurden die technischen Strukturen und die Beratungsangebote auf- und ausgebaut. Der Zentrale Informatikdienst der Universität Wien stellt zum Beispiel derzeit Shares, eine Cloudlösung (u:cloud) in zwei Versionen, GitLab, die Datenbank easydb der Firma Programmfabrik zur Verfügung um Daten sicher zu speichern und innerhalb eines Projekts bearbeiten zu können. Zusätzlich wurde das Angebot an Schulungen und Beratungen ausgebaut, derzeit werden über die Personalentwicklung der Universität Wien Schulungen zum Thema „Datenmanagementplan erstellen", „Datenmanagement und Datenarchivierung an der Universität Wien", sowie eine praktische Einführung in PHAIDRA angeboten. Für Doktorand*innen gibt es spezielle Angebote. Auch in bibliotheksspezifischen Ausbildungen, wie beispielsweise „Library and Information Studies", dem darauf aufbauenden Masterlehrgang „Library and Information Studies MSc." sowie dem Zertifikatskurs „Data Librarian" wird auf das Datenmanagement entlang des gesamten Datenmanagementzyklus eingegangen und gezeigt, wie der Umgang mit Daten gelingen kann.

Die Erfahrungen haben gezeigt, dass eine gut funktionierende Kommunikation und Interaktion zwischen den Bibliotheksmitarbeiter*innen, den Techniker*innen und den Anwender*innen hinsichtlich des Forschungsdatenmanagements unerlässlich ist. Dazu benötigen sie nicht nur technisches Basiswissen, sondern auch einen Einblick in den aktuellen Wissenschaftsbetrieb. Hier kommt das Konzept von Datastewards und Datachampions zum Tragen, das an manchen Universitäten bereits umgesetzt wird und das an der Universität Wien derzeit konzipiert wird [11].

Heute ist PHAIDRA und damit auch der Teil, in dem die open access Publikationen abgelegt werden, u:scholar ein Teil der forschungsunterstützenden Services[1] an der UB Wien. Dabei handelt es sich um ein ganzes Bündel an Angeboten, das den gesamten Projektlebenszyklus umfasst, von der Recherche über die Archivierung bis zur Nachnutzung der Daten. Hier sollen nur einige der Angebote genannt werden:

1   https://bibliothek.univie.ac.at/forschungsunterstuetzung/

1.	Datenrecherche: PHAIDRA, AUSSDA[2] , Sammlungen der Universität Wien[3]

2.	Unterstützung bei der Durchführung von Forschungsprojekten: Digitalisierungsservice, Forschungsdatenmanagementberatung Literaturrecherche: Datenbanken, Suchmaschinen, Kataloge, Fernleihe von gedruckten Werken, Beratung bei der Erstellung von Datenmanagementplänen, Beratung bei EU-Projekten.

3.	Unterstützung bei der Archivierung der Daten: PHAIDRA und AUSSDA

4.	Publikationsunterstützung durch das Open Access Büro bzgl. u:scholar, Publikationsfonds, Open Journal System

5.	Unterstützung bei der Sichtbarmachung der eigenen Forschung: Bibliometrische Services, DOI-Dienst, Forschungsinformationssystem u:cris [11]

Beratung im Bereich Metadaten

Metadaten übernehmen in digitalen Repositorien ein breites Aufgabenspektrum, denn sie präsentieren das archivierte digitale Objekt, können aber auch den Zugang zu Objekten barrierefrei gestalten, indem sie beispielsweise Bilder mit einer Beschreibung versehen, sie in mehreren Sprachen verfügbar machen oder zusätzliche Hinweise für die Nutzung des digitalen Objekts anbieten. Metadaten können aber noch viel mehr. Forschungsdaten, Sammlungsobjekte usw. werden erst durch eine umfassende Beschreibung verständlich und so auch für andere Disziplinen und für spätere Generationen wiederverwendbar. Dabei entstehen jedoch auch neue Herausforderungen. Metadaten müssen – wie die archivierten Daten und Informationsressourcen selbst – stets gepflegt und langzeitarchiviert werden. Um hochqualitative Metadaten – wenn möglich – automatisch zu generieren und sie optimal zu visualisieren, ist sowohl bibliothekarisches als auch fachspezifisches Wissen notwendig [7].

Zeitintensiver als Objekte in ein Repositorium hochzuladen ist es die jeweils passenden Metadaten auszuwählen und einzutragen. Dabei müssen viele Entscheidungen schon im Vorfeld getroffen werden. Die Frage nach den passenden Beschreibungen der Objekte umfasst viele

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2	The Austrian Social Science Data Archive ist eine Dateninfrastruktur für die sozialwissenschaftliche Community in Österreich und bietet eine Vielzahl an forschungsunterstützenden Services an. https://aussda.at/

3	https://bibliothek.univie.ac.at/sammlungen/

Dimensionen. Es muss überlegt werden, in welcher Sprache man die Metadaten eingibt, welche Schlagworte sinnvoll sind, wie detailliert die Beschreibung der Objekte sein sollen, ob ein kontrolliertes Vokabular verwendet werden soll oder nicht. Die Zeit und Energie, die man in die Auswahl und Erstellung von Metadaten Objekte investiert, lohnt sich in jedem Fall. Die Objekte werden durch eine gut durchdachte Beschreibung rascher gefunden, die eigene Arbeit ist im Netz auffindbarer und leichter in den jeweiligen Kontext einzuordnen und ermöglicht eine eventuelle Nachnutzung. Die Metadaten bestimmen wesentlich mit, ob ein Objekt auch außerhalb der eigenen Wissenschaften genutzt werden kann oder nicht. Allgemein verständliche Metadaten erleichtern Forscher*innen aus Nachbardisziplinen den Umgang mit Objekten, die evtl. in einem völlig anderen Zusammenhang entstanden sind, aber dennoch für das eigene Fach wichtig sein können [5].

Um den Umgang der Forschenden mit Metadaten einschätzen zu können, wurden in den Projekten „e-infrastructures Austria"[4] und e-infrastructures Austria plus"[5] jeweils eine Studie durchgeführt [12]. Dabei zeigte sich, dass der Umgang mit Metadaten in Repositorien noch keineswegs selbstverständlich, bzw. erprobt war. Metadaten sind zwar aus dem bibliothekarischen Alltag bekannt, die praktische Umsetzung dieses Wissens auf die Erfordernisse von Repositorien steht ziemlich am Anfang. Hier ist nicht nur technisches Know-How wichtig sondern vor allem auch das Bewusstsein, wie wichtig Metadaten für Forscher*innen, bzw. für künftige Nutzer*innen der Objekte sind [5].

Themen wie Linked Open Data oder Controlled Vocabularies, aber auch der Umgang mit nichtstandardisierten Begriffen, wie auch politisch nicht mehr korrekten Bezeichnungen werden uns auch in den nächsten Jahren weiterhin intensiv beschäftigen. Auf der technischen Ebene wird überlegt, inwieweit sich die Übernahme von technischen Metadaten automatisieren lässt.

Zahlreiche Wissenschafter*innen arbeiten mittlerweile versiert mit verschiedenen Metadatenschemata wie Dublin Core[13] – einem standardisierten Vokabular für die Erzeugung von Metadaten –, „Metadata Objects Description Schema" (MODS), dem XML-Format für bibliografische Metadaten, oder „Metadata Encoding and Transmission Standard" (METS) aus.

4 https://e-infrastructures.univie.ac.at/
5 https://www.e-infrastructures.at/de/

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Verwenden die Forscher strukturierte Metadatenschemata, garantieren sie damit gleichzeitig eine konsistente Beschreibung ihrer Daten, die auch von künftigen Wissenschafter*innen genutzt werden können. Wichtig sind strukturierte und hochqualitative Metadaten auch für die Auffindbarkeit der Daten und somit für die Sichtbarkeit der Forschung, was aufgrund der heutigen immensen Fülle an Forschungsoutput für den Wissenschaftsbetrieb immer wichtiger wird. Eine gute Beschreibung der Daten ermöglicht es auch den Repositorienmanager*innen, für eine langfristige Verfügbarkeit der Daten und die Möglichkeit eines Austausches zu sorgen [7].

Metadaten beziehen sich auf folgende zentrale Aspekte: auf den Inhalt, auf den Kontext und auf die Struktur. Demnach werden unterschieden:

- beschreibende Metadaten
- administrative Metadaten
- strukturelle Metadaten und
- technische Metadaten.

Zusammenfassend lassen sich unter anderem folgende Vorteile von Metadaten auflisten:

- Sie ermöglichen den Zugang zu den Daten. Keine Bibliothek kommt ohne Metadaten – in diesem Fall Katalogen, Discovery-Systemen und Suchmaschinen – aus.
- Vor allem in der „digitalen" Welt sind Metadaten unverzichtbar, will man Objekte auffinden.
- Daten werden erst durch Metadaten sichtbar. Ähnlich wie Bücher in einer Bibliothek durch den Katalog erschlossen werden, informieren Metadaten über die archivierten Daten.
- Die Weitergabe von Metadaten ermöglicht den Aufbau von Portalen und Datenbanken wie beispielsweise der Europeana.
- Forschungsdaten ohne (weitere) Erklärungen sind kaum nutzbar.
- Metadaten reduzieren die Komplexität von Systemen.
- Metadaten erlauben den internationalen und fächerübergreifenden Austausch der Daten.
- Metadaten ermöglichen die globale Nutzung der Daten.
- Durch die mehrsprachige Beschreibung und die Verwendung von Thesauri, aber auch natürlichsprachlichen Texten sowie Verlinkungen auf andere Ressourcen werden Daten für eine breite Nutzerschicht zugänglich.

- Metadaten erleichtern den Zugang zu Informationen für Personen mit körperlichen Einschränkungen. Beschreibungen von Bildern oder Grafiken erleichtern sehbehinderten oder blinden Personen den Zugang zu Daten, ebenso verhelfen Videos mit Gebärdensprache gehörlosen Personen zur Nutzung von digitalen Inhalten.
- Metadaten bewahren den Kontext der Daten auf.
- Metadaten machen die Daten für die Lehre zugänglich.
- Metadaten dokumentieren die Nutzung von Daten.
- Sie verwalten unterschiedliche Versionen von Daten.
- Metadaten geben Auskunft über rechtliche Aspekte. Sie zeigen, wer die Rechte an den jeweiligen Objekten besitzt, welche Lizenzen vergeben wurden und wie die Zugriffsrechte gestaltet sind.
- Sie enthalten Informationen darüber, wie die digitalen Objekte auch zukünftig am Leben erhalten und weiter genutzt werden können.
- Metadaten geben Auskunft über unterschiedliche kulturell oder politisch bedingte Benennungen von Personen oder Orten.
- Sie geben Hinweise auf eventuell analog nicht mehr vorhandene Objekte.
- Durch die Angabe des Urhebers, dessen Lebensdaten und der Entstehungsdaten
- des Werks sind wertvolle Hinweise auf die jeweilige rechtliche Situation vorhanden. Die Angabe von Lizenzen erleichtert die Nachnutzung, ebenso die Information, ob ein Text bereits publiziert ist oder nicht.
- Kontrolliertes und standardisiertes Vokabular ermöglicht ein rasches Auffinden
der Daten, da unterschiedliche Schreibweisen, bzw. historische Benennungen, miteinander verlinkt sind bzw. Homonyme kenntlich gemacht werden.
- Persistente Identifier, wie beispielsweise die Digital Object Identifiers (DOI),garantieren die Zitierung der Objekte, die Open Researcher and Contributor ID (ORCID) wird als einmalige „Adresse" für Forscher eingesetzt; Namensgleichheiten führen nicht mehr zu Verwechslungen, Namensänderungen sind bei der
- Metadaten ermöglichen virtuelle Ausstellungen sowie die Repräsentation von Sammlungen [7].

Nationale und internationale Zusammenarbeit

Von Anfang an war sowohl die nationale als auch die internationale Zusammenarbeit von Repositorienbetreiber*innen wichtig. Das H2020-Projekt LEARN[6] (2015–2017) erarbeitete über natio-nale und themen-spezifische Fallstudien Empfehlungen für die Formulierung und Implementierung von Forschungsdaten-Policies für Universitäten und außeruniversitäre Forschungseinrichtungen sowie Fördergeberinstitutionen (LEARN 2017). Damit behandelte LEARN das Feld Research Data Management (RDM), das auf Ebene der Institutionen und geförderten Projekte zum Thema Research Data Management Plan führt.

Die beiden HRSM-Projekte e-Infrastructures Austria und e-Infrastructures Austria Plus[7] widmen sich dem RDM auf nationaler Ebene, erarbeiten organisatorische und rechtliche Richtlinien und beleuchten Fragen der Langzeitarchivierung, Infrastruktur und Metadaten. Dazu hat wesentlich das dreijährige Projekt „e-Infrastructures Austria"10, koordiniert von der UB Wien, beigetragen. 2014 vom Bundesministerium für Wissenschaft, Forschung und Wirtschaft (BMWFW) initiiert, sollte es österreichweit den koordinierten Aufbau sowie die Weiterentwicklung von Repositorieninfrastrukturen fördern. In den drei Jahren konnte viel Know-how in den Bereichen Open Access, Technik, rechtliche Fragen, Metadaten usw. aufgebaut werden. Es entstand ein umfassendes Netzwerk mit Bibliothekar*innen, Techniker*innen, Forscher*innen, Forschungsservices und anderen Expert*innen sowie ein Wissenspool an dem alle partizipieren können. Das Nachfolgeprojekt „e-Infrastructures Austria Plus" wurde – koordiniert von der Universität Innsbruck – von 2017–2019 durchgeführt. Im Rahmen der beiden aufeinanderfolgenden Projekte, die aus Hochschulraumstrukturmittel gefördert wurden, e-infrastructures und e-infrastructures plus wurde ein österreichweites Netzwerk aufgebaut, das die Zusammenarbeit zu Themen wie open access, Aufbau von Repositorien, rechtliche Fragen, Überlegungen zum Umgang mit Metadaten uvm. miteinander diskutiert wurde. Daraus entstand auch die Idee ein Netzwerk für Repositorienmanager*innen[8] zu gründen um Problemstellungen gemeinsam zu bewältigen und Anleitungen, Paper, Guidelines usw. in enger Zusammenarbeit zu produzieren. Im RepManNet, einer Kooperation zwischen der

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6   http://learn-rdm.eu/en/about/

7   https://www.e-infrastructures.at/de/

8   https://datamanagement.univie.ac.at/forschungsdatenmanagement/netzwerk-fuer-repositorienmanagerinnen-repmannet/

Universitätsbibliothek Wien und dem ubifo (Forum Universitätsbibliotheken Österreichs), sind mehr als 40 Institutionen und mehr als 130 Personen vertreten. Arbeitsgruppen zu Themen wie „Forschungsdatenmanagement in der Praxis", „FAIRe Metadaten", „Hochschulschriften" oder „Digital Humanities" tauschen sich in regelmäßigen Sitzungen aus und erarbeiten gemeinsam Lösungen [8].

Neben dem steten Ausbau unserer Services möchten wir noch intensiver als bisher mit den Forscher*innen in Kontakt kommen, um ihre Bedürfnisse besser kennenzulernen. Eine Gelegenheit dazu bietet das im Jänner gestartete Projekt „FAIR Data Austria"[9] Es gehört zu den ausgewählten Digitalisierungsvorhaben an öffentlichen Universitäten, die vom BMBWF in den Jahren 2020 bis 2024 gefördert werden und soll zur Stärkung des Wissenstransfers zwischen Universitäten, Wirtschaft und Gesellschaft beitragen und den nachhaltigen Aufbau der European Open Science Cloud unterstützen. Die Laufzeit beträgt drei Jahre, Kooperationspartner sind die TU Graz (Lead) und die TU Wien. An der UB Wien, in der Abteilung „Repositorienmanagement PHAIDRA-Services" liegt die Verantwortung für das Workpackage „Training und Support Services für ein effizientes Forschungsdatenmanagement". Im Rahmen dieses Workpackages sollen unter anderem Tools für die Generierung von Daten nach den FAIR-Prinzipien geprüft, Schulungsunterlagen optimiert und barrierefrei gestaltet werden, bzw. auch die Implementierung eines Datastewardmodells für die UB Wien vorbereitet warden [11].

Auch auf internationaler Ebene ist der Austausch selbstverständlich. So ist die Universitätsbibliothek Wien Mitglied von COAR (Confederation of Open Access repositories) und partizipiert seit Beginn an der EOSC (European Open Science Cloud). Damit werden Strukturen für die Zukunft geschaffen um Forschungsoutput möglichst rasch und effizient miteinander zu teilen und zur Verfügung zu stellen.

Das PHAIDRA-Netzwerk

Das PHAIDRA-Netzwerk[10] umfasst derzeit 20 Partner, einige Institutionen befinden sich in Italien, bzw. Serbien. Recht bald nach dem Start von PHAIDRA meldeten sich auch andere Universitäten, die auf der Suche nach Langzeitarchivierungssystemen waren und wurden Partner. 2010 schloss beispielsweise die Universität Padua einen Vertrag mit

9   https://www.forschungsdaten.info/fdm-im-deutschsprachigen-raum/oesterreich/projekte/fair-data-austria/
10 https://www.phaidra.org/

der Universität Wien. Das dortige System wird vor allem für die Präsentation von Sammlungen verwendet. Inzwischen betreut die Università di Padova auch die Università Ca' Foscari und die Università Iuav di Venezia mit. Wie es zu der Kooperation mit Wien kam, wird folgendermaßen beschrieben:

> Based on a convergence of interests, organisational sizes and open-ness to collaboration, the Library System began working with the University of Vienna's project. A key moment for initiating this cooperation was the receipt of three Erasmus Staff mobility grants in 2009 for a librarian and two IT specialists. This experience allowed us to closely study an international project as well as have frequent opportunities for discussions about Phaidra developments with Austrian colleagues, an approach that helped inform the choice of adopting Phaidra at the University of Padova. (Andreoli/Carrer/Drago/Turetta/Zane 2018, 126)

Die Universität Padua arbeitet sehr eng mit Museen und Archiven zusammen, entwickelte PHAIDRA gemeinsam mit der Universität Wien weiter und implementierte eine eigene Präsentationsoberfläche für digitale Sammlungsobjekte. Anders als beispielsweise an der Universität Wien, werden die Objekte von Mitarbeiter*innen der Universitätsbibliothek hochgeladen, die auch für die Qualität der Daten und Metadaten sorgen. Seit 2014 wurden mehr als 20 Digitalisierungsprojekte betreut, eigens entwickelte Guidelines für den Digitalisierungsprozess sorgen für eine qualitätsgesicherte Durchführung.[11]

Im Nachhinein war es eine gute Wahl PHAIDRA zu verwenden, so die Betreiber*innen in Padua:

> Over the years, Phaidra has proved to be the best technology choice be-cause of its nature as an open system capable of extending its functionality to meet the challenges that have gradually arisen: from promoting digital collections to interface customisation of a user-centred site, from interoperability and dialogue with other systems and services to the creation of a network of local and international collaborations between GLAM institutions [1].

In den letzten Jahren sind zahlreiche Universitäten und Institutionen der PHAIDRA-Community beigetreten, unter anderem die FH St. Pölten, die Kunstuniversität Linz, die Universität für angewandte Kunst in Wien, Universitäten in Serbien, Bosnien und Herzegowina und Montenegro, die vor allem Abschlussarbeiten und wissenschaftliche Beiträge archivieren.

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11 https://phaidra.cab.unipd.it/static/linee-guida-digitalizzazione-EN.pdf

Die Universität für angewandte Kunst verband im Rahmen des Hochschulraumstrukturmittel (HRSM)-Projekt „Portfolio/Showroom – Making Art Research Accessible" (portfolio-showroom.ac.at) PHAIDRA mit Anwendungen, die den Forschungsoutput darstellen. Die Angewandte konnte gemeinsam mit ihren Projektpartnerinnen basis wien, der Österreichische Akademie der Wissenschaften/Austrian Centre for Digital Humanities (ACDH) und Universität für Musik und darstellen-de Kunst Wien (mdw) von 2017 bis Ende 2021 an der Entwicklung zweier Webapplikationen arbeiten, die zusammen die Funktionalitäten eines FIS/CRIS abbilden, nämlich die Webapplikationen Portfolio und Showroom, die als Open Source-Software entwickelt wurden [2].

Im Showroom wird die gewünschte Visibilität durch zwei Features angestrebt: Erstens erstreckt sich eine Suche im Showroom über alle Instanzen (Federated Search). So führt eine Suche nach einem bestimmten Thema nicht nur zu Treffern an der eigenen Institution, sondern listet zudem Fachkolleg/innen auf, die an anderen Universitäten und außeruniversitären Forschungseinrichtungen tätig sind. Zweitens ist es möglich, Informationen zu Personen und Ereignissen zu abonnieren. Die Benutzer/innen erfahren so von Neuigkeiten, die von den jeweils abonnierten Fachkolleg/innen online gestellt werden [2].

Eine Umfrage an der Angewandten machte deutlich, dass der Wunsch der Benutzer*innen besteht, erfasste Daten zu organisieren und zu verwalten. Portfolio wird die von den Benutzer*innen eingeforderten Funktionen schrittweise implementieren und so u.a. den Export der eigenen Bibliografie, Verleihgeschichte und andere Features anbieten. Umgekehrt möchten User*innen bereits auf anderen Plattformen eingetragene Daten in Portfolio/Showroom weiterverwenden. Dafür bietet Portfolio die Möglichkeit, Daten über Schnittstellen, so diese existieren bzw. zugänglich sind [2]. Tragen die Benutzer*innen Informationen zu ihren Datensätzen auf Plattformen ein, die Linked Open Data unterstützen (u.a. ORCID, Research Catalogue, VIAF) so können diese Informationen in Showroom ergänzend angezeigt werden. (ebd.) Eine Veröffentlichung der Daten in Showroom erfolgt nur nach bewusster Freigabe durch die Dateneigentümer*innen. Werden die Daten in Showroom veröffentlicht, so legt das System diese auf den Repositorien der Universitäten und außeruniversitären Forschungseinrichtungen ab, um einen Zugang nach den FAIR-Prinzipien sicherzustellen. Die Speicherung der Assets auf den bestehenden Repositorien

ist eine Möglichkeit, etablierte Metadatenstandards zu berücksichtigen und den Datenaustausch zu gewährleisten. Eine weitere stellt das controlled vocabulary dar, das in Portfolio und Showroom Verwendung findet. Mittels eines Ontologie-Editors können Schlagwörter, Feldnamen etc. mit bestehendem Vokabular (u.a. CERIF, Gettys „Art & Architecture Thesaurus", GND, ÖFOS) verknüpft werden. Showroom kann darauf aufbauend entsprechende Schnittstellen zur Verfügung stellen [2].

Die Landesbibliothek Vorarlberg verwendet VOLARE vor allem um die Kultur Vorarlbergs digital zugänglich zu machen. Fotosammlungen, Ansichtskarten, Karten und vieles mehr werden übersichtlich und in hoher Auflösung für alle zugänglich angeboten. Der FWF betreibt seine E-Book Library, die die geförderten Open Access Publikationen enthält, auf der Basis von PHAIDRA. Jüngste PHAIDRA-Partner sind die Donau-Universität Krems, die Anton Bruckner-Privatuniversität und die Veterinärmedizinische Universität Wien.

Blick in die Zukunft

Einig sind sich die Forschenden bzgl. Repositorien auf jeden Fall in ihren Forderungen, dass das Hochladen eigener Publikationen und Daten sowie deren Beschreibung kaum Zeit in Anspruch nehmen darf und von allen Endgeräten aus jederzeit möglich sein soll. Archivierte Objekte müssen rasch und ohne weiteren Aufwand in unterschiedliche Systeme weiter-verbreitet werden können. Nutzer*innenzahlen, Downloadstatistiken für bibliometrische Auswertungen und diverse Evaluierungen müssen ebenfalls jederzeit problemlos abrufbar sein. Ausfälle des Systems – wenn auch noch so kurz – werden nicht mehr toleriert [6].

Auf europäischer Ebene wird derzeit mit der Implementierung der European Open Science Cloud (EOSC)[12] versucht, eine transnationale „Plattform" zu schaffen, um mittel- und langfristige Lösungen im Bereich der Speicherung und Zurverfügungstellung von Forschungsdaten zu setzen.

Auf strategischer Ebene ist es wichtig langfristig zu planen wie sich Repositorien in schon an den Institutionen bestehenden anderen Systemen eingliedern und optimal vernetzen lassen. Dazu kommen noch Fragen nach dem Marketing, nach der Positionierung des Repositoriums in den Institutionen bis zu Überlegungen, welche

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12 https://ec.europa.eu/info/research-and-innovation_en

Ausbildung Mitarbeiter*innen benötigen, wenn sie ein Repositorium mit all den oben beschriebenen Handlungsfeldern betreuen sollen. Diese Fragen variieren von Institution zu Institution, wobei alle Repositorienmanager*innen immer wieder mit juristischen und ethischen Fragen konfrontiert sind. Eine der zentralen Fragen wird sein, welchen Stellenwert Repositorien in Zukunft für die Forschung haben werden, bzw. welche Funktionalitäten gebraucht warden [6]. Um diese Fragen möglichst umfassend beantworten zu können, ist es heute mehr denn je wichtig, dass die Repositorienbetreiber*innen eng mit internen und externen Serviceeinrichtungen zusammenarbeiten und auch zunehmend die Forschenden in Diskussionen miteinbeziehen.

Derzeit gibt es internationale und nationale Bestrebungen das Konzept der Data Stewards an den Universitäten einzusetzen. Personen, die ursprünglich aus der Forschung kommen, sollen disziplinspezifisch Forschende beim Datenmanagement unterstützen. Die Begriffe Open Science und FAIR-Data sind derzeit aus dem Wissenschafts- betrieb kaum mehr wegzudenken. Daten sollen möglichst offen und frei zugänglich sein, Transparenz in der Forschung wird von allen Seiten, unter anderem von den Fördergebern, gefordert. Nicht nur Menschen sollen raschen Zugriff auf die offenen Daten haben, sondern auch Maschinen sollen die Daten ungehindert lesen können. So begrüßenswert diese Forderungen auch sind, oft werden dabei Personen vergessen, die aufgrund unterschiedlicher Einschränkungen mehr Unterstützung benötigen [9]. Die Motivation sich mit diesem Thema zu beschäftigen liegt darin, dass bei den Diskussionen rund um Open Data, Open Science oder Open Educational Resources Barrierefreiheit kaum erwähnt wird. Das kann eventuell damit begründet werden, dass Barrierefreiheit heute vorausgesetzt wird, was nicht mit der Realität übereinstimmt, dass die technischen Lösungen, wie etwa die fortschreitende Umsetzung der Maschinenlesbarkeit als ausreichende Maßnahme gesehen wird oder dass sie schlichtweg nicht mitbedacht wird. Barrierefreiheit ist noch lange nicht flächendeckend umgesetzt, weder im baulichen Bereich, noch in der digitalen Welt. Universitäten und ganz besonders Universitätsbibliotheken müssen in recht aufwändigen Verfahren, abgesehen von den baulichen Anpassungen, Anstrengungen unternehmen Literatur und Unterrichtsmaterialien barrierefrei zu gestalten. Gleichzeitig ist Barrierefreiheit ein komplexes Thema, vor allem, wenn man sich mit der Bereitstellung von wissenschaftlichem Output, der in Repositorien gespeichert ist, auseinandersetzt. Es ist unumgänglich, sich mit unter-

schiedlichen Fragen auf verschiedenen Ebenen zu beschäftigen. Um Inhalte barrierefrei gestalten zu können, sind in einem ersten Schritt mögliche unterschiedliche Einschränkungen von potentiellen Usern zu berücksichtigen. Menschen mit Mobilitätseinschränkungen haben andere Bedürfnisse als gehörlose, schwerhörige, blinde oder sehbehinderte Personen. „Sehbehinderung" sagt ebenfalls wenig darüber aus, wie die Angebote gestaltet werden müssen, denn visuelle Beeinträchtigungen können unterschiedliche Anforderungen an die Technik, bzw. an die Gestaltung der Weboberfläche erforderlich machen. Ebenso benötigen gehörlose Nutzer*innen eventuell wieder völlig andere Aufbereitungsarten der Daten als Hörbehinderte. Wie kann man für alle interessierten Menschen sicherstellen, Inhalte ohne Einschränkungen konsumieren zu können? Einerseits wird hier technische Expertise benötigt, andererseits ist aber auch Expert*innenwissen aus anderen Bereichen gefragt. Wichtig ist vor allem eine enge Zusammenarbeit mit betroffenen Personen um nicht an den Bedürfnissen vorbei zu denken und zu entwickeln. Grundsätzliches Wissen, beispielsweise, wie man Texte barrierefrei gestaltet oder Bilder so beschreibt, dass sie auch nicht oder sehr schlecht sehenden Personen zugänglich sind, ist recht rasch erlernt. Dafür gibt es bereits Guidelines und Standards. Die Zugänglichkeit zum Repositorium wird durch folgende Elemente erleichtert:

• Zu einem möglichst barrierefreien Repositorium zählt zunächst die Zugänglichkeit. Das Repositorium muss leicht im Internet aufgefunden werden können, die Navigation auf der Einstiegsseite sollte so gestaltet werden, dass man sich rasch zurecht- findet und ohne Probleme einloggen kann. Je weniger bürokratischer Aufwand nötig ist, um das Repositorium nutzen zu können, desto besser. Im Idealfall ist auch die Vergabe von Zugangsberechtigungen einfach und ohne Hürden bewältigbar.

• Sämtliche Informationen, wie beispielsweise Guidelines und Nutzungsbedingungen sollten eben- falls mehrsprachig angeboten werden, in einer einfachen Sprache, Abkürzungen sollten sparsam verwendet und erklärt werden.

   • Die Mehrsprachigkeit trägt ebenfalls zu einer einfacheren Nutzung des Dienstes bei.

   • Ein klares Design erleichtert die Handhabung für Menschen mit und ohne Einschränkungen.

   • Wenn Bilder vorhanden sind, sollten diese ebenfalls gut erklärt werden. Screenshots sollten nur mit entsprechenden Beschreibungen verwendet werden.

• Die Beschreibungen der archivierten Objekte, also die Metadaten, sind ebenfalls so zu gestalten, dass sie für alle nutzbar sind.

• Ebenso sind die Objekte selbst entsprechend vorzubereiten.

• Nicht zuletzt müssen auch das Repositorium selbst und sämtliche Schnittstellen entsprechend aufbereitet werden [9].

Abgesehen von den Inhalten, die für alle zugänglich sein sollten, muss auch sichergestellt werden, dass das System selbst aktiv verwendet werden kann. Das Abspeichern von Inhalten in digitalen Langzeitarchivierungssystemen ist oft ein komplexer Vorgang, der möglicherweise sehbehinderten oder blinden Wissenschafter*innen, bzw. Personen mit Mobilitätseinschränkungen nicht zugänglich ist. Diese Einschränkung widerspricht jedoch dem Open Access-, bzw. Open Science-Gedanken, der davon ausgeht, dass der eigene wissenschaftliche Output, wann immer es möglich ist, auch mit anderen geteilt werden soll. Wenn dies einer Personengruppe verwehrt ist, schließt man sie aus einem wesentlichen Bereich des Wissenschaftsbetriebes aus. Dies wiederum widerspricht nicht nur den Gesetzen, sondern auch einer ethischen Wissenschaft. Barrierefreiheit ist keine Aufgabe für Techniker*innen, Gesetzgeber oder einzelne dafür eingestellte Personen, sondern für uns alle [9].

Mögliche Strategien für die Zukunft

1. Zusammenarbeit: Eine kontinuierliche Zusammenarbeit von Forschenden mit Techniker*innen und Bibliothekar*innen ist wichtig. Forscher*innen müssen aktiv in Überlegungen rund um das Forschungsdatenmanagement und den Aufbau von Repositorien miteinbezogen werden.

2. Ressourcen: Es müssen genügend personelle – und finanzielle Ressourcen zur Verfügung stehen, um ein stabiles und umfassendes Forschungsdatenmanagement garantieren zu können.

3. Flexibilität: Eine hohe Flexibilität der vorhandenen Systeme wie der Repositorien ist nötig. Diese müssen bei Bedarf immer wieder angepasst werden können.

4. Diversität: Für unterschiedliche Anforderungen müssen verschiedene technische Lösungen bereitgestellt werden, neben der Langzeitarchivierung sollten Löschmöglichkeiten oder ausreichend Speicherplatz für Forschende vorhanden sein.

5. Rahmenbedingungen: Es müssen zusätzlich geeignete Rahmenbedingungen geschaffen werden, beispielsweise Policies, die Abläufe regeln.

6.	Anpassung: Das Repositorium und die angebotenen Services müssen in die bereits vorhandene Systemlandschaft eingebettet werden.

7.	Kommunikation: Vor allem in großen und heterogenen Institutionen ist es wichtig, die Services entsprechend zu bewerben.

8.	Offenheit: Offen zugängliche Schnittstellen ermöglichen den raschen Austausch mit anderen Systemen.

9.	Netzwerke: Die Zusammenarbeit mit Forschungsdatenmanager*innen aus anderen Intuitionen, ermöglicht gemeinsame Aktivitäten und einen regen Austausch.

10.	Usability: Nicht zuletzt entscheidet die Usability, ob das Repositorium angenommen wird oder nicht. Das heißt, dass die Repositorienbetreiber*innen bzgl. der technischen und gesellschaftlichen Entwicklungen auf dem Laufenden bleiben müssen.

11.	User*innenorientierung: Es ist wichtig zu wissen, was die User*innen an Technik und an Services benötigen. Dabei sollen sowohl Studierende als auch Professor*innen einbezogen werden.

12.	Neugierde: Interesse an den Forschungen in den jeweiligen Fachdisziplinen, an den neueren technischen und gesellschaftspolitischen Entwicklungen haben, um passende Services anzubieten.

13.	Bodenhaftung: Man sollte einschätzen können, was wann mit welchen Mitteln umgesetzt werden kann, denn leere Versprechungen verärgern die User*innen [10].

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Workflow Modell für die digital Langzeitarchivierung in PHAIDRA

Raman Ganguly

Abstract. This article describes the experience from practical work how data from research can be preserved long-term. The findings from the operation of the system PHAIDRA are a key for this illustration. Through the cooperation with the data producers, a workflow model has been developed that is now also being adopted in other areas, such as data management for e-learning. The model consists of four phases and takes into account the entire cycle from production to reuse. At the end of the article, different kind of data will be discussed.

Zusammenfassung. Dieser Artikel greift Erfahrungen aus der Praxis auf und beschreiben wie Daten aus der Forschung in eine langfristige Aufbewahrung übergeführt werden können. Dabei wird auf die Erkenntnisse aus den Betrieben von PHAIRA mit eingebracht. Durch die Zusammenarbeit mit den Datenproduzent*innen hat sich ein Workflow Modell entwickelt, dass jetzt auch in anderen Bereichen, wie dem Datenmanagement für die Lehre, übernommen wird. Das Modell bestehe aus vier Phasen und berücksichtig den gesamten Zyklus von der Produktion bis zur Nachnutzung. Zum Schluss des Artikels wird noch die Besonderheit von unterschiedlichen Daten eingegangen.

Keywords: long-term data storage, digital data preservation.

Stichworte: Langzeitdatenspeicherung, digitale Datenerhaltung.

Ausgangssituation und Rahmenbedingungen

Geht es darum Daten langfristig aufzubewahren, so spielen verschiede Personengruppen eine Rolle. In der Forschung sind nicht die Forschenden Verantwortlich für die Aufbewahrung der Ergebnisse, sondern zentrale Einheiten der Institutionen. Traditionell wurden und werden Ergebnisse in Publikation festgehalten, die dann über Verlage publiziert und von Bibliotheken aufbewahrt werden. Mit dem Beginne des digitalen Zeitalters können nicht mehr alle Ergebnisse auf Basis der Publikation nachvollzogen und reproduziert werden, da zu dem Forschungsprozess Daten und Software benötig werden [19]. Daher ist es notwendig auch diese vorliegenden Daten und Software langfristig aufzubewahren. Die Disziplin der digitalen Datenaufbewahrung ist noch sehr jung und das Bewusstsein wie fragil digitale Daten sind, ist noch nicht weit verbreitet [18].

An diese Punkt setzt der Workflow Modell von PHAIDRA an. Es soll dabei helfen die Daten an die definierten Stellen zu übergeben und das Verständnis für die Bedeutung der digitalen Aufbewahrung zu fördern. Es richtet sich vorrangig an die Forscher*innen und soll ihnen dabei helfen den Prozess zu verstehen, damit möglichste wenig Aufwand für sie entsteht. Auch ist es ein Hilfsmittel für die*den Datenmanager*innen, da über das Workflow Modelle ein Werkzeug für die Beratung zur Verfügung steht.

Das Modell ist so gestaltet, dass es sich an den Werten von Open Sicence ausrichtet. Hier geht es darum ein offenes und transparentes Umfeld für die Forschung zu schaffen. Neben der eigentlichen Forschung wird hier die Dissemination von Forschung und auch die Lehre mitgedacht [24]. Besonders im Berich Open Education wird das Workflow Modell in adaptierter Form übernommen, um eine nationale Infrastruktur für Österreich aufzubauen [16].

Neben den technischen Themen der Archivierung sind auch nicht-technische Themen von Bedeutung. Besonders nehmen hier ethische und rechtliche Themen immer mehr Raum ein, auf die Rücksicht genommen werden muss. Neben den FAIR Date Prinzipien, die ein starker Treiber in der European Open Science Cloud [8] sind [9], fordern die EU und andere nationale Fördergeben, dass Daten möglichst offen, also unter einer freien Lizenz zur Verfügung gestellt werden. Um diese machen zu können, muss sich die aktuelle Forschung schon von Beginn an mit den Thema Datenmanagement auseinandersetzen, da Rechte und ethische Bedingungen geklärt werden müssen [2].

Das Workflow Modell im Überblick

Das Basismodell besteht auf vier Phasen und beschreibt den Ablauf wie Daten von involvierten Personengruppen beim Datenmanagement behandelt werden. Es ist nicht mit den OAIS Modell [3] für die Langzeitarchivierung vergleichbar, obwohl es sich an diesem Konzept orientiert. Das OAIS Modell fokussiert sich auf das Daten Preservation [15] und das Workflow Modell beschreibt das Zusammenspiel der Abläufe.
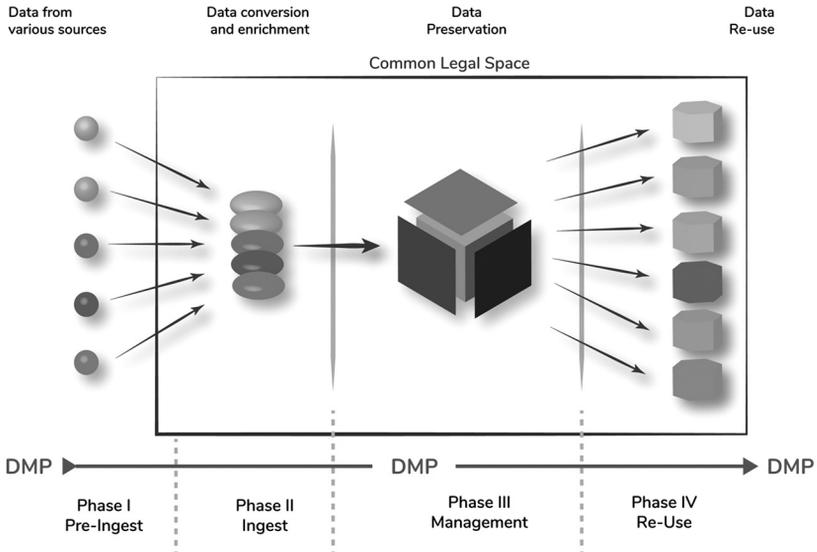
Abbildung 1: Workflow Modell

Die Abbildung 1 zeigt schematisch das Workflow Modell mit seinen vier Phase. Der Pfeil mit der Beschriftung DMP steht für Data Management Plan, der den gesamten Workflow begleitet. Wichtig ist auch der Bereich des Common Legal Space, der eine Rechtsicherheit für die Verwendung der Daten darstellt. Mit Eintritt von der Phase I in die Phase II wird diese Rechtssicherheit hergestellt, damit es den Anforderungen von der Fördergeben, wie oben beschrieben, auch gerecht wird [12].

Dieses Modell wird nicht nur für das Forschungsdatenmanagement verwendet, sondern auch für die Archivierung von Daten aus der Lehre. Wenn man Forschung und Lehre, besonders die forschungsgestützte Lehre, zusammen denkt, ist dieser Workflow für das Datenmanagement die Grundlage von Open Science. Open Science richtet sich nicht nur die

akademische Welt, sondern auch an ein interessiertes Publikum und so bewegt man sich in Richtung Citicen Science. Mit diesem Hintergrund ist die Bedeutung des gemeinsamen Rechtsraums für Daten noch besser zu erkennbar. Nur über eine klare rechtsgültige Definition was mit den Daten in der Nachnutzung geschehen darf, kann es einen breiten offen Zugang geben. Open meint aber nicht nur einen freien Zugang zu Daten, sondern auch einen transparenten Zugang. Nicht alle Daten können geöffnet werden, daher ist eine Zugangskontrolle auch ein wesentliches Element im Datenmanagement.

Phase I: Pre-Ingest

Der Pre-Ingest beschreibt die Phase der Datenerzeugung. Das Augenmerk wird hier auf die Qualität der Daten und die Erzeugung der Daten gelegt. Hier soll noch nicht das Datenmanagement berücksichtigt werden, da die bestmögliche Qualität der Daten bei Pre-Inges wichtiger ist. Natürlich sollen hier Dinge berücsichtig werden, die keinen direkte Einfluss auf die Qualität der Daten haben, jedoch im weiteren Verlauf des Datenmanagement zu Erleichterungen bei der Behandlung der Daten führt, wie etwa die Wahl, falls möglich, eines offenen Formats für die Daten. Auch die Klärung von rechtlichen Fragen, wie dem Urheberrecht oder dem Datenschutz sollten in die Datenproduktion mit einfließe.

Der Datenmanagement Plan stellt schon zu Beginn eines Projekts dar welche Daten im Laufe des Forschungsprojekts erstellt werden und wie damit umgegangen werden soll. Forschungsförderer, wie zum Beispiel der FWF in Österreich, verwende bereits ein fertiges Template in dem unter anderem die Art und Größe der Daten abgefragt wird. Neben den technischen Merkmalen werden nicht-technischen und rechtliche sowie ethische Rahmenbedingungen abgefragt [11].

Der Fokus auf die Qualität im Per-Ingest ist sehr wesentlich, da dies die Ausgangbasis für die langfristig Aufbewahrung der Daten ist. Diese Qualität ist im Datenmanagement aufrechte zu erhalten und ist daher das Maß für eine erfolgreiche Aufbewahrung. So darf die Qualität nach der Ingest Phase nicht mehr verändert werden. Auch Ingest Phase wird nur das Format kontrolliert und sofern Notwendig eine Formatänderung durchgeführt. Es gibt natürlich Rahmenbedingungen, die die Qualität bestimmen, so kann es bei Tonaufnahmen im Feld nicht die gleiche Qualität erzählt werden wie in einem Tonstudio unter kontrollierten Bedingungen. Dennoch ist darauf zu Achten, dass die bestmög-

liche Qualität unter den bestehenden Rahmenbedingungen erstellt und an das Datenmanagement geliefert wird.

Phase II: Ingest

Liegt der Fokus beim Per-Ingest auf die Datenproduktion, so ändert sich dieser in der Ingest Phase auf das Datenmanagement. In dieser Phase werden die Daten von der Produktion in das Datenmanagement übergeben und aus den Daten werden Digitale Objekt. Hier findet eine enge Zusammenarbeit zwischen beiden Bereichen Produktion und Management statt. Wie sich aus der Praxis gezeigt hat, sind genau in diese Phase gute Supportstrukturen ein wesentlicher Erfolgsfaktor für eine Übernahme der Daten in das Datenmanagement notwendig.
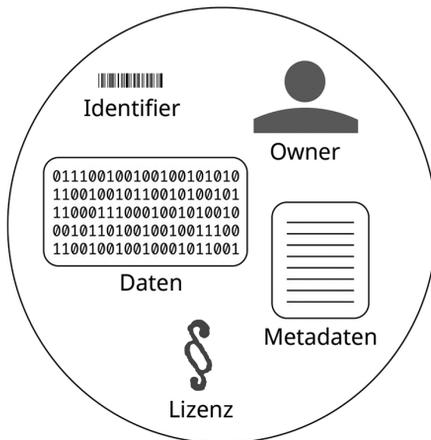
Abbildung 2: Digitales Objekt

Ein digitales Objekt unterscheidet sich von den Daten dadurch, dass es mit zusätzlichen Informationen angereichert werden. Die Daten selbst werden in der Ingest Phase dahingehen untersucht, ob das Format für die Aufbewahrung über die geforderte Zeit sinnvoll ist, oder ob es in ein anderes Format migriert werden muss. Ist eine Migration notwendig, so kann diese nur im Zusammenspiel mit die*den Datenproduzent*innen gesehen, da eine anschließen Qualitätskontrolle unumgänglich ist. Nur die Datenproduzent*innen können die Qualität ihrer Daten sinnvoll beurteilen.

Wie Sie in der Abbildung 2 sehen, kommen neben den Daten noch zusätzliche Informationen in Form der Metadaten dazu. Die Metadaten

beschreiben das Objekt näher und helfen bei der zukünftigen Auffind-
barkeit des Objekts. In diesem Beitrag wird nicht näher auf die Metada-
ten eingegangen, vertiefen Informationen können Sie in einen Beitrag
von Frau Blumesberger finden [1].

Neben den Metadaten werden wird mindestens ein persistenter Iden-
tifikator zum Objekt hinzugefügt. Dieser Identifikator darf sich über die
Zeit niemals ändern und muss immer zu der gleichen Seite im Internet
führen. Es gibt mehrere Technologien und Arten solcher Identifikator,
die bekannteste Variante ist die DOI [5]. Der Identifikator führt im Ideal-
fall auf eine sogenannte Landingpage, die alles wesentlichen Informa-
tionen des Objekts darstellt [4]. Die Identifikatoren ermöglichen eine
langfristige stabile Zitierbarkeit der Daten.

Neben der Auffindbarkeit (Metadaten) und langfristigen Erreichbar-
keit (persistente Identifikatoren) sind auch die rechtlichen Informatio-
nen für der Art der Nachnutzung ein Merkmal eines digitalen Objekts.
Dies wird über die Lizenzinformation zur Verfügung gestellt. Daher ist
notwendig spätestens beim Ingest alle Rechte aus Sicht des Urhebe-
rechts und des Datenschutzes zur klären. Da Rechtsklärungen sehr
langwierig sein können, macht es Sinn schon bei der Datenproduktion
auf den Rechtsbereich zu achten. Diese wurde auch schon im Kapitel
Phase I: Pre-Ingest angesprochen. Zu den Rechten gehört auch noch die
Information über die*den Besitzer*in es Objekts, daher wird auch noch
diese Information zum digitalen Objekt aufgenommen.

Phase III: Datenmanagement

Das Datenmanagement ist eine zentrale Aufgabe und kann nicht
über Projekte abgewickelt werden, da es hier um die Kernaufgabe der
langfristigen Aufbewahrung der Daten geht. Basis ist der technische
und nicht-technische Betriebe von Archivsystemen. Aus der Praxis hat
sich gezeigt, des es hier nicht möglich ist für alle Arten von Daten ein
einiges Archivsystem bzw. Repositorium zur Verfügung zu stellen. Das
Datenmanagement muss daher eine komplexe Infrastruktur aufbauen
und betreiben [13]. An der Universität Wien geschieht dies in einer en-
gen Zusammenarbeit zwischen der Bibliothek und dem zentralen Re-
chenzentrum.

Die wesentlichen Aufgaben für das Datenmanagement sind die Auf-
rechterhaltung der Qualität über die geforderte Zeit. Weiteres dürfen
nur jene Personen Zugriff auf die Daten erhalten, die die nötige Berech-
tigung dazu haben. Dies drei Kernelemente Qualität, Zeit und Zugriff

beeinflussen sich gegenseitig können je nach Daten unterschiedlich komplex sein.

1. Zeit: Je länger Daten aufbewahrt werden müssen, umso schwer ist es ist diese Zugänglich zu halten, weil die digitale Technologie sehr vielen Änderungen unterliegt. So kann es sein, dass Formate über die Zeit nicht mehr lesbar sind, daher müssen Methoden entwickelte werden um die Lesbarkeit der Daten aufrecht zu erhalten [10]. Eine dieser Möglichkeiten besteh darin die Daten von einem obsoleten Format in ein aktuelles zu migrieren.

2. Qualität: Kommt es zu mehreren Prozessen in dem das Format geändert werden muss, kann die Qualität der Daten darunter leiden, da es ein Eingriff in die Datenstruktur selbst ist. Eine Qualitätskontrolle nach einer Migration ist notwendig und kann sehr Aufwendig für das Datenmanagement sein. Auch muss der Bitstream, die essentiellen Informationen, gespeichert als 0 und 1en, regelmäßig auf deren Konsistenz geprüft werden. Je länger die Aufbewahrung dauert, im Extremfall die Langzeitarchivierung, um so häufige kann es zu physikalischen Schäden am Speicher selbst kommen, die den Bitstream verändern.

3. Zugriff: Nicht alle Daten sind gegeiten diese Open Access zu stellen. Bei manchen Daten muss man aus ethischen oder rechtlichen Aspekten den Zugang einschränken. Daher ist die Aufgabe des Datenmanagement auch die Kontrolle für den Zugriff auf die Daten zu übernehmen. Der Zugang kann sich über die Zeit auch verändern, da möglichen Rechte über die Zeit obsolet werden.

Da sich die Rahmenbedingungen (Qualität und Zugriff) über die Zeit verändern, ist ein stabiler Betrieb des Datenmanagement unerlässlich, da nur so die Zugänglichkeit der Daten gewährleistest werden kann. Das Datenmanagement ist ein erheblicher Aufwand für Institutionen und es bedarf qualifiziertes Personal um dies Aufgabe auch wahrnehmen zu können. Die Aufteilung der Aufgaben über mehrere Abteilungen, wie es an der Universität Wien geschieht, kann dabei helfen Teams von unterschiedlicher Qualifikation, wie es bei dieser Aufgabe notwendig ist, zu etablieren.

Phase IV: Re-Use

Die vierte Phase ist die sinnstiftende Phase für das Datenmanagement. Daten die in Zukunft nachgenutzt werden, lohnt sich der erhebliche Aufwand der im Datenmanagement betrieben wird. Natürlich kann

man zu Beginn noch nicht wissen in welcher Form die Daten nachgenutzt werden und vor allem nicht wann. Oft bekommen Daten erste nach vielen Jahre eine neue Bedeutung und werden in einer Form nachgenutzt, die man sich ursprünglich gar nicht vorgestellt hat. So werden heute alte Logbücher aus der Seefahrt für die Klimaforschung ausgewertet [17].

Natürlich ist es nicht möglich solche Dinge vorherzusehen, dennoch sollte man sich bei der Auswahl der Daten zu Beginn Gedanken über die mögliche Nachnutzen manch. Auch wie bei der Planung von Projekten gilt hier der Leitsatz, vom Ende her zu denken. Besonders bei der Beschreibung der Daten, die in den Metadaten zu finden sind, macht es Sinn sich zu überlegen wer die Daten nachnutzen wird und wie. Dadurch ist es leichter möglich aussagekräftige Informationen den Daten mitzugeben.

Bei der Re-Use Phase finde auch wieder eine Übergabe statt. Hier übergibt das Datenmanagement die Daten an die*den Nachnutzer*in und das Datenmanagement kann davon ausgehen, dass die*der Nachnutzer*in sich dem Gesetz nach konform verhält. Daher ist es Notwendig die relevanten Informationen, wie die Daten genutzt werden dürfen zur Verfügung zu stellen, was das über die Lizenz geschieht. Die Übergabe Erfolg wie in digitalen üblich über die Weitergabe einer Kopie der originalen Daten, die im Datenmanagement natürlich verbleiben.

Arten von Daten

Im Datenmanagement hat man es mit vielen unterschiedlen Art von Daten zu tun, die nicht all im gleichen Archivsystem abgelegt bzw. verwaltet werden können. Die Unterscheidung kann nach der Dauer der Aufbewahrung, der Komplexität oder der Sensibilität der Daten unterschieden werden. Aus Sicht des Datenmanagement macht es durchaus Sinn die Dauer zu unterscheiden, da für die Langzeitarchivierung mehr auf die Formate geachtet werden muss als bei einer kurzfristigen Aufbewahrung.

Die Komplexität der Daten wird nicht nur vom Datenformat bestimmt, sondern auch ob es sich Daten handelt, die Dateien abgelte sind, oder ob die Daten in einer Datenbank gehalten werden. Für Datenbanken gelten ganz andere Voraussetzungen für die Zugriff und die Zitierung, da es bei Datenbanken möglich ist, dass sich der Datenbestand über die Zeit ändert. Will man eine Auswahl von Daten in einer Datenbank zitieren, so muss Sichergestellt werden, dass das Zitat im Lauf der

Zeit immer zu den geleichenen Ergebnissen führt. Dazu gibt es Empfehlung von einer Arbeitsgruppe von Research Data Alliance [20].

Software ist ein weiter Spezialfall, der extra behandelt werden muss. Hier ist auch zu unterschieden ob die Software in Betrieb gehalten werden soll, oder ob nur der Source Code aufbewahrt werden soll. Für Software gibt es bereits etablierte Tools, wie die Versionskontrolle, die für das Datenmanagement genutzt werden können [14].

Kommt es zu der Anforderung Big Data zu archivieren, muss auch hierfür geeignete Infrastruktur gewählt werden, dass die Daten für den einfachen Download nicht mehr angeboten werden können. Es muss hier eine Infrastruktur gewählt werden, die es ermöglicht Daten einfach zu transportieren. Meistes werden dies Daten an speziellen Hochleistungsrechnersystem benötig, an denen die Big Data prozessiert werden. Die Übermittlung zu solchen Rechnern sollt direkt vom Datenarchiv aus geschehen.

Ausblick in die Zukunft

Durch zunehmende Digitalisierungsaktivitäten von Bücher und Objekte, für die Erhaltung des kulturellen Erbes [21] bedarf es in Zukunft einer gut Abstimmung zwischen den Workflows der Digitalisierung und des Datenmanagement. Da diese Projekte über ein einen langen Zeitraum laufen und regelmäßig neuen Daten in die Archivsystem gelangen, macht es Sinn gewisse Abläufe, besonders jene aus der Phase II, zu automatisieren. Manuelle Qualitätskontrollen sind dennoch unerlässlich, diese können aber bei guten Prozessen dann Stichprobenartig vorgenommen werden.

An der Universität Wien finden bereits Digitalisierungsprojekte [7] in größeren Umfang statt, bei dem auch das Datenmanagement beteiligt ist. Hier ist es im Vorfeld zu einer Abstimmung des Workflows der Digitalisierung mit dem Workflow des Datenmanagement gekommen. In einem Fall wurde sogar zur bessern Eingabe von Metadaten eine spezialisiert Eingabemasken entwickelt und es wurden neue Objekttypen für die Archivierung erstellt. Dies konnte nur durch eine enge Zusammenarbeit der beiden Bereiche erreichte werden.

Bei den Sammlungen, aber auch bei anderen Daten aus Forschung und Lehr bedarf es oftmals erweiterte Darstellungen der digitalen Objekte, die ein Archivsystem nicht mehr leisten kann. Hier ist es dann notwendig für eine bessere Nachnutzung eigenes Interfaces oder eine Webseite aufzubauen. Zwei Beispiel der Universität Wien sind das Kurt

und Ursula Schubertarchiv [22], bei dem es zu einer Integration in der universitäre Content Management System TYPO3 gekommen ist und u:scholar [23], in dem Open Access Publikationen der Universität dargestellt werden.

Das enge Zusammenspiel aus den drei Stakeholder, die im Workflow Modell betrachtet werden: Datenproduzent*innen, Datenmanager*innen und Nachnutzer*innen sind ein wesentlicher Garant für ein qualitativ hochwertiges Datenmanagement. Werden alles drei Bereiche betrachtet, so können die Daten langfristig in einer gewünschten Form auch präsentiert. Weil es unterschiedliche Gesichtspunkte in der Produktion, der Datenhaltung und der Nachnutzung gibt, müssen diese aufeinander Abgestimmt werden.

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Die Universitätsbibliothek Wien und ihre russischen Bestände

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Abstract. This article describes the history and development of the University Library of Vienna and the Slavic Studies Collection at the University Library of the University of Vienna. The accumulated collection of literature is actively used in the study of East European history.

Die Universitätsbibliothek Wien ist die älteste Universitätsbibliothek im deutschen Sprachraum. Die so genannte „publica libraria" wurde im Jahr 1365 durch Rudolf IV. gegründet und befand sich in der Gegend des heutigen Universitätsplatzes. Neben der allgemeinen Büchersammlung sind aber auch an den vier Fakultäten eigenständige Büchersammlungen nachzuweisen. Im 15. Jahrhundert wuchs der Buchbestand rasch an. Ein eigener „bibliothecarius", aus dem Kreis der älteren Magister bestellt, war seit 1443 damit betraut, die Werke vor Beschädigung und Entwendung zu schützen. Die Bände waren angekettet, durften nur nach Bezahlung von Gebühren von Fakultätsmitgliedern benutzt werden und konnten nur in Ausnahmefällen entlehnt werden. Die Universitätsbibliothek war immer eng mit der Universität verknüpft. Als durch die Türkenkriege und die Pestepidemien der Stellenwert der Universität Wien im 16. und 17. Jahrhundert stark abnahm, ging auch die Bedeutung der Bibliothek zurück, bis sie im Jahr 1756 den Betrieb gänzlich einstellte; die noch vorhandenen Bücher verleibte sich die Hofbibliothek ein. Die Klosterbibliothek der Jesuiten übernahm interimistisch die Aufgabe der Literaturversorgung für den Stu-

dien- und Lehrbetrieb der Universität Wien. Nach zweijährigen Vorarbeiten wurde die Universitätsbibliothek am 13. Mai 1777 – dem Tag des 60. Geburtstags Kaiserin Maria Theresias – schließlich wieder eröffnet. Sie wurde vor allem mit den Beständen der aufgelassenen Jesuitenklöster ausgestattet. Die neue Universitätsbibliothek, die ca. 80.000 Bände beherbergte, war im barocken Bibliothekssaal des Akademischen Jesuitenkollegs und einigen Nebenräumen untergebracht und schon damals allgemein zugänglich. Die UB unterstand direkt dem Staat und nicht der Universität, der Bibliotheksleiter war also direkt dem Minister verantwortlich. Diese Bestimmung änderte sich erst am 1. Jänner 2000, als die Universitätsbibliothek dem Rektor der Universität unterstellt wurde.

Der Buchbestand nahm durch Schenkungen, Nachlässe und Ankäufe kontinuierlich zu, und damit stieg auch die Benutzung rasch an. In der ersten Hälfte des 19. Jahrhunderts musste deshalb ein Erweiterungsbau in Angriff genommen werden. Die UB Wien wurde rasch zur führenden Forschungsbibliothek der österreichisch-ungarischen Monarchie. Als die Universität Wien 1884 in das neue Gebäude am Ring zog, wurde auch die Bibliothek dort untergebracht. Da jedoch keine Möglichkeiten zur Erweiterung der Räumlichkeiten eingeplant worden waren, blieb die Raumnot bestehen. Die Blütezeit ging mit dem Ersten Weltkrieg zu Ende, da es durch Einberufungen zu Personalknappheit und zu Lücken im Bestandsaufbau kam. Die Wirtschaftskrise verschärfte die Situation. 1938, nach dem „Anschluss" an das Deutsche Reich und unter der Regierung der Nationalsozialisten, gelangten Werke, die der jüdischen, bzw. politisch verfolgten Bevölkerung enteignet worden waren, an die Universitätsbibliothek. Die heute an der UB Wien angesiedelte Provenienzforschung beschäftigt sich mit der Herkunft dieser Werke und Sammlungen und bemüht sich seit Jahren, die rechtmäßigen Besitzer bzw. Erben ausfindig zu machen und den Besitz zurückzuerstatten [1]. Während des Zweiten Weltkrieges wurde der Buchbestand nach Niederösterreich ausgelagert. Durch Transport, schlechte Lagerung und andere kriegsbedingte Komplikationen gingen viele Bücher verloren oder wurden beschädigt. Das Universitätsorganisationsgesetz aus dem Jahre 1975 etablierte eine engere organisatorische Verbindung der Bibliothek mit der Universität, ohne jedoch deren Unabhängigkeit anzutasten, Fachbereichsbibliotheken entstanden.

Als 1998 die Magazine keine neuen Bücher mehr aufnehmen konnten, wurden die Räume der ehemaligen Niederösterreichischen Landesbibliothek in der Teinfaltstraße 8 angemietet und etwa 300.000 Bücher

dorthin ausgelagert. Wenig später konnte die neue Lehrbuchsammlung im Hauptgebäude ihren Betrieb aufnehmen. Mit Inkrafttreten des UG 2002 am 1. Jänner 2004 wurde die Universitätsbibliothek gemeinsam mit dem Archiv der Universität Wien und den zu Fachbereichsbibliotheken neu zusammengelegten ehemaligen Fakultäts-, Fach- und Institutsbibliotheken zur „Dienstleistungseinrichtung Bibliotheks- und Archivwesen" zusammengeschlossen. In der Folge wurden etliche dezentrale bibliothekarische Einrichtungen zu größeren Einheiten zusammengefasst.

In den letzten Jahren hat die Bibliothek zahlreiche neue Aufgaben übernommen und bietet viele neue Services an. Literatur kann bequem von zu Hause mit mehreren Suchkatalogen gefunden, bestellt und vorgemerkt werden. Zahlreiche elektronische Zeitschriften und e-books werden bereitgestellt. Diplomarbeiten und Dissertationen, die an der Universität Wien entstehen, werden größtenteils online bereitgestellt. Ältere, rechtsfreie Bücher können gegen ein geringes Entgelt auf Bestellung digitalisiert werden und werden nach einer exklusiven Benützungsdauer im Langzeitarchivierungssystem Phaidra hochgeladen und sind frei im Internet verfügbar. Phaidra, das Repositorium der Universität Wien, steht der gesamten Universität seit 2008 zur Verfügung und dient der langfristigen Sicherung von digitalen Objekten unterschiedlichen Inhalts und in unterschiedlichen Formaten. Phaidra unterstützt den Open-Access-Gedanken, die Objekte sind auch über Suchmaschinen auffindbar. Bilder, Texte, Audio- und Videoobjekte u.v.m. können – mit Metadaten und Lizenzen versehen - in Phaidra genau beschrieben und archiviert werden [7]. Auf der Basis von Phaidra konnten bereits mehrere EU-Projekte durchgeführt werden, darunter TEMPUS, Europeana Libraries und OpenAIRE, bzw. OpenAIREplus, sowie ein Institutional Repository unter dem Namen u:scholar [9] aufgebaut werden. Ein Open- Access-Board wurde als Anlaufstelle für alle Fragen rund um Open Access an der Uni Wien eingerichtet, bietet individuelle Beratung und Support für WissenschaftlerInnen, Betreuung des Zeitschriftenredaktions- und -publikationssystems OJS an, koordiniert OA-Aktivitäten an der Universität Wien und darüber hinaus, z.B. im OA Netzwerk Austria [5, 3]. Das Team Bibliometrie wurde eingerichtet, um WissenschaftlerInnen, Institute, Fakultäten und andere EntscheidungsträgerInnen mit bibliometrischen Daten zu versorgen und bei deren Interpretation zu unterstützen [4].

Seit 2006 werden die Forschungsleistungen der MitarbeiterInnen der Universität Wien zentral erfasst. Das bisherige System RAD (Research

Activities Documentation) wurde im Oktober 2013 durch ein zeitgemäßes Forschungsinformationssystem abgelöst. Diese Dienste werden im Rahmen der Forschungsunterstützung durchgeführt. Die Universitätsbibliothek Wien ist auch verantwortlich für die systematische Erfassung und Präsentation aller Sammlungen und Einrichtungen, die zu Lehr- und Forschungszwecken an den verschiedenen Instituten und Departments der Universität Wien untergebracht sind, um diese sowohl den MitarbeiterInnen und Studierenden der Universität Wien, als auch der interessierten Öffentlichkeit bekannt zu machen. An der Universitätsbibliothek laufen auch einige Projekte, unter anderem wurden die historischen hebräischen Bestände der UB Wien katalogisiert, denn der alte handschriftliche Nominalkatalog der Universitätsbibliothek Wien (1500-1931) beinhaltet eine bemerkenswert große Anzahl an Hebraica, also Werke, die zur Gänze, zu einem großen bzw. wesentlichen Teil mit hebräischen Lettern gedruckt worden sind. Einen besonderen Schwerpunkt bildet die jüdische Aufklärungsliteratur Mitte des 19. Jahrhunderts, mit Wien als bedeutendem Druckort. Es finden immer wieder Ausstellungen, Lesungen, Vorträge und Tagungen zu unterschiedlichen Themen statt [10].

Russische Literatur und Werke zur russischen Literatur- und Sprachgeschichte wurde bereits ab der ersten Hälfte des 19. Jahrhunderts in der Hauptbibliothek systematisch gesammelt, in den Katalogen erschlossen und zur Benutzung bereitgestellt. Dabei handelte es sich aber in erster Linie um die Werke klassischer russischer Schriftsteller und Dramatiker.

Mit dem Beginn des 20. Jahrhunderts wurden auch vermehrt wissenschaftliche Standardwerke und Enzyklopädien angeschafft.

Der Erste Weltkrieg allerdings führt dazu, dass viele Geschäftsbeziehungen zu Ländern des slawischen Kulturkreises abgebrochen wurden bzw. nur erschwert fortgesetzt werden konnten. Der Bezug von Zeitschriften und Reihen wurde eingestellt und nach 1918 nur in geringerem Umfang wieder aufgenommen.

Viele Schenkungen und Nachlässe enthielten russische Bücher, die der sehr universal ausgerichteten Universitätsbibliothek immer hoch willkommen waren. Auch der regelmäßige Tausch von Druckwerken mit Bibliotheken aus der Sowjetunion bzw. jetzt Russland vermehrt kontinuierlich den Bestand an russischen Werken.

Mit Ausnahme der Referenzwerke (Wörterbücher, Enzyklopädien, Bibliographien) stehen alle Werke in russischer Sprache – der Haupt-

bibliothek entsprechend – der Aufstellung nach Numerus currens über sämtliche Magazinsbereiche verteilt, so dass interessierte Leser nur mit Hilfe der Kataloge diese Werke auffinden und bestellen können.

Die Umsetzung der kyrillischen Schrift der russischen Sprache erfolgte immer schon genau nach den international gültigen Transliterationsregeln, für den allgemeinen Gebrauch aber, für Leser, die Werke der russischen Literatur nur in transkribierten Ansetzungen kannten, wurden aber in sämtlichen Katalogen Verweiskarten von den gebräuchlichsten Formen angelegt.

Die Bestände des ‚Seminars für slawische Philologie', später ‚Instituts für Slawistik', die seit dem 19. Jahrhundert den Forschern, Lehrenden und Studierenden der Universität Wien zur Verfügung standen, wurden 1984 offiziell zu einer ‚Fachbibliothek' und der Universitätsbibliothek Wien als eine ihrer dezentralen bibliothekarischen Einrichtungen angegliedert. Sie stellt, nunmehr am Campus der Universität Wien angesiedelt, für die Forschenden, Lehrenden und Studierenden slawischer Sprachen neben den historisch gewachsenen Sammlungen und Rara die aktuelle Fachliteratur bereit und ist aus dem Universitätsbetrieb nicht mehr wegzudenken [8].

Ein Projekt der späten 1960-er Jahre, das 1971 seine Vollendung erfahren konnte, soll noch Erwähnung finden, da es sehr gut den Stellenwert der slawischen / russischen Literatur nicht nur an der UB Wien verdeutlicht. Der spätere Vizedirektor, HR Dr. Otto Peschl erfasste dabei erstmalig alle Bestände der slawischen Sprach- und Literaturwissenschaft der UB. Dies war in den Jahren nach dem Zweiten Weltkrieg umso wichtiger, da Literatur von ‚jenseits des Eiserne Vorhangs' im Westen selten geworden war, auch teilweise nicht einfach zu beschaffen. Die UB hatte nach der Nationalbibliothek im Westen den größten Slavica-Bestand, auch resultierend aus der Tatsache, dass Wien als Zentrum der Österreichisch-Ungarischen Monarchie geradezu prädestiniert für diese Bestände gewesen war. Damals wurden etwa 23.000 Titel in rund 30.000 Katalogaufnahmen erfasst. Bei dieser langwierigen Arbeit konnten auch einige Frühdrucke aus dem 16. Jahrhundert aufgefunden und somit leichter nachgewiesen werden. Selbstverständlich werden diese Zimelien in gesonderten Magazinen untergebracht und unterliegen speziellen Benutzungsbedingungen [6].

Der Bestand an russischer Literatur in der Hauptbibliothek wird kontinuierlich von einem Fachreferenten (Absolventen des Studiums der Slawistik) gepflegt und in Absprache bzw. Abstimmung mit dem Leiter

der Fachbereichsbibliothek erweitert und aktualisiert. Entsprechend den Sammelrichtlinien der UB Wien ist angestrebt, Fach- und Standardliteratur einander ergänzend in Haupt- und Fachbereichsbibliothek aufzustellen. Seit zwei Jahren werden die Rossica originalschriftlich katalogisiert. Die Bezugsbedingungen haben sich mit der Einführung des Kapitalismus zwar grundlegend verbessert, aber die gestiegenen Preise für Druckschriften sind in Zeiten gekürzter Budgets doch ein beachtlicher Wermutstropfen!

Bedingt durch die Grenzöffnung und den Zuzug von Studierenden aus den Ländern des ehemaligen Ostblocks erlebt die Benützung russischer Bestände an der UB Wien eine neue Dimension, der Informationsaustausch mit russischen Bibliotheken und Universitäten profitiert von den neuen Kommunikationsmöglichkeiten und technischen Neuerungen auf dem Gebiet der Informationsbeschaffung und bietet somit Forschern und Wissenschaftlern aus dem In- und Ausland beste Möglichkeiten für eine verstärkte internationale Zusammenarbeit.

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Chapter 3

Education development strategies 2030 in the field of inclusion and special pedagogy

Specifics of Communication in Children with Cerebral Palsy: Alternative and Augmentative Communication (AAC)

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Abstract. In this work we describe Alternative and Augmentative Communication (AAC) as one of the ways of communication developed for people with communication, language and speech problems, in general, and for children with Cerebral palsy, in particular.

Keywords: cerebral palsy, communication, alternative and augmentative communication.

Cerebral palsy

Cerebral palsy (CP) is the most common cause of physical disability affecting children in developed countries with an incidence of 2.0-2.5 per 1000 live births. The classic definition of CP is "a disorder of movement and posture due to a defect or lesion of the immature brain" [3]. This definition was modified in 1992 to encapsulate the heterogeneity of the disorders covered by the term CP to: "an umbrella term covering a group of non-progressive, but often changing, motor impairment syndromes secondary to lesions or anomalies of the brain arising in the early stages of development" [26]. The definition of CP has been revised recently by an executive committee for a report on the Definition and Classification of Cerebral Palsy, April 2006, to incorporate concepts developed by the ICF [35]. The proposed definition is 'Cerebral palsy describes a group of permanent disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor

disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication, and behavior by epilepsy, and by secondary musculoskeletal problems' [35].

Epidemiology of CP

The overall prevalence of CP is about 2.0 to 3.5/1000 live births. The prevalence is greater in low birth weight infants (90/1000 weighing less than 1000g versus 1.5/1000 in those weighing 2500g or more) [8]. Term infants represent more than half of all cases with CP [4]. Compared with singletons, the relative risk of CP in twins is 5.6 and in triplets is 12.6.6. The death in utero of a co-twin places the surviving twin at high risk for developmental problems. Improvements in obstetric and neonatal care have reduced the incidence of CP in prematures [16], but the overall prevalence has not changed due to a stable rate in term infants, greater survival in preterm, and extended longevity [18]. Most cases of CP have no relationship to prematurity or asphyxia [27]. The full extent of the motor disability may not be evident until 3–4 years of age. The majority of children affected with CP survive into adulthood, but life expectancy is negatively affected by the presence of severe quadriplegia, profound retardation, visual impairments, and lack of appropriate medical care. In addition to the defining motor disabilities, individuals with CP have a variety of non-movement problems, including intellectual disability (40–70%), epilepsy (35–94%), speech and language disorders (50–60%), chronic sleep disorders, and disorders of vision or hearing (10–30%) [28; 29; 39]. Children with CP also have more psychological difficulties than do children in the general population [38]. The association between socioeconomic status (SES) and CP is controversial; with some evidence suggesting that the effect of SES goes beyond just mediating factors affecting preterm birth, low birth weight, and postnatal trauma [40].

Communication in children with Cerebral Palsy

Communication is the act of sending and receiving messages. It is usually accomplished by gesture, facial expression, and spoken or written language. Skilled communication allows us to share our ideas, thoughts, and feelings. In childhood it facilitates the development of relationships and access to education, leisure activities, and later, employment. Children with cerebral palsy (CP) often experience communication difficulties and recent epidemiological studies have suggested that communication limitations are associated with motor impairments

in the first years of life [7] and with both motor and cognitive skills in later childhood and in the high school years [17]. Cerebral palsy is also responsible for dysfunctions of senses of sight, hearing, speech and language [21]. There are other associated problems, because cognitive development is directly related to communication and language. The lack of communication with other people in earlier stages of life can irreversibly impair their intellectual capacity in the future. This problem is even more critical when language is affected by brain injury [21]. The motor disorders of CP can affect children's production of speech, facial expressions, gestures and body movements, and reduce children's ability to act as effective senders of communication signals. Children may have difficulty in initiating movements and movements may be inconsistent, varying in speed, range and strength. Hence, the signals may be produced too late in conversation, may vary from one occasion to the next, and may look and sound different from those produced by children without motor disorders. These differences make children's communication difficult to interpret and parents often arrange conversations around the few signals they can understand. Parents of children with motor disorders often lead conversation, and children adopt a respondent role. Conversation often comprises repeated short exchanges: parents ask questions or request children to perform activities; children respond; parents follow up the responses with brief acknowledgements and then ask further questions or make further requests. Children rarely make requests of their own and take very little control over conversation [32]. Such patterns of conversation put children with motor disorders at risk of becoming passive communicators, and children with CP often fail to develop a full range of communication skills. As active and enquiring communication is needed to engage fully in social and education activities, children with motor and communication disorders are also at risk of exclusion.

Type of CP is observed to predict communication function. More severe communicative limitations are observed for children with dyskinetic forms of CP than with spastic type [17]. Communication difficulties in bilateral spastic and dyskinetic CP may be due to motor speech impairment alone, but may also be influenced by accompanying intellectual impairments. Vos R.C. et al. [43] have prospectively studied the communication of children with CP in four different age cohorts and have modelled communication trajectories for children with dyskinetic CP, and unilateral and bilateral spastic CP (with and without intellectual impair-

ment) from 2 to 16 years. Himmelman K. et al. [17] suggest that across childhood the strongest predictor for expressive, face-to-face communication is CP type and distribution, with unilateral spastic CP associated with best outcome. After an initial lag, the children they tracked who had spastic type CP without intellectual impairment acquired expressive skills similar to their peers with typical development. Children with non-spastic type who did not have intellectual impairment continued to lag behind, potentially due to the severity of their dysarthria. Vos R.C. et al. [43] measured expressive communication using the Vineland Adaptive Behavior Scales, which mainly reports interaction using language. Items on this assessment could be passed using spoken language or language produced using augmentative and alternative communication (AAC) systems. It would be interesting to ascertain the impact of AAC on children's expressive communication in this study. Information on how many children used AAC, the types of systems they used, and the complexity of messages they produce would be helpful. Without the use of such systems mean expressive communicative performance may have been lower, but by what degree is impossible to speculate. Such data could provide important support for the implementation of AAC, which is far from universal, even in countries with relatively well developed and resourced health, education, and welfare systems such as the UK. Intellectual impairment was the strongest predictor of receptive communication. These results suggest that language difficulties in CP are strongly influenced by general cognition and that language disorder is not common in this group of children, which has previously been hypothesized [33]. It is noticeable that the raw scores of children with bilateral spastic CP were reduced in middle adolescence. Further prospective research, with children studied for longer periods or with potentially larger samples, is needed to examine if the trajectories observed by Vos R.C. et al. [43] can be replicated, and indeed if receptive scores may continue to change in later adolescence. Vos R.C. et al. [43] also provide valuable information on written language development. Learning to read and spell is particularly important in our technological world; information technology can create vast opportunities for learning, leisure, and employment. However, access to information technology and social media is heavily dependent on the written word. This is the first epidemiological study to track prospectively the literacy development of young people with CP. It is encouraging to observe that children without intellectual impairment achieved literacy scores similar to their

peers with typical development. Future research could also ascertain the causes of literacy difficulties. Some children's literacy may be commensurate with their general intellectual development. Other children's literacy may be influenced by difficulties in phonological awareness and verbal working memory [10]. Further information on literacy acquisition could help us provide tailored literacy instruction and help young people increase their access to technology and potentially enhance their participation in social, educational, and civic life.

Children with CP, including those who develop speech, could take a respondent role in interaction and to use communication for a smaller range of functions than children without motor disorders [31].

Failure to develop a full range of communicative functions (e.g. the ability to ask questions or signal lack of understanding of a speaker's message) can severely limit children's independence. Early Speech and Language Therapy intervention therefore often focuses on training parents to recognize children's idiosyncratic communication signals and to facilitate their children's communication development by creating more frequent and more varied conversational opportunities. Parent communication training has a growing body of experimental evidence to support its implementation [14] but the generalizability of training has not been tested in randomized controlled trials.

The aim of such early intervention is to provide children with the communication skills onto which they can build language and become independent communicators. For children whose speech intelligibility is severely limited by their motor disorder language may be expressed using Augmentative and Alternative Communication (AAC). Evidence of the effectiveness of AAC in promoting communicative independence is available for children with wide ranging communication profiles [32; 36]. AAC has helped children to initiate conversation more frequently, use a wider range of communicative functions, access a broader vocabulary, and increase narrative performance.

Communication Function Classification System (CFCS)

There are a number of functional classification systems that describe specific area of function that was the focus of every system. For example, the original system (the Gross Motor Function Classification System [GMFCS] Palisano et al. [30] explicitly looked only at "gross motor" function, this being by definition the hallmark impairment of cerebral palsy. The Manual Ability Classification System (MACS) [11] was created

by Swedish colleagues whose research interests and clinic work concern "manual function." They had initially challenged the developers of the Gross Motor Function Classification System regarding its apparent disregard of "manual abilities," whereas the Gross Motor Function Classification System had explicitly focused only on gross motor function in order not to confound one aspect of function with another. In creating the Communication Function Classification System (CFCS) [15] Hidecker et al wanted to categorize levels of communicative functioning beyond traditional approaches used by speech-language pathologists. Like the earlier classifications, the intent of the Communication Function Classification System was to describe people's ability to communicate without regard to the way the function achieved, and without the traditional emphasis on "normal" function.

The CFCS is a valid measure in cerebral palsy that assesses everyday communication (not optimal communication) [15]. The CFCS is a simple, five-point ordinal classification system, and was designed to be analogous and complementary to the GMFCS and MACS. Being an effective communicator requires both sending and receiving information, and the CFCS accordingly assesses both how information is expressed and how it is received. The CFCS allows all methods of communication (e.g., vocalizations, manual signs, eye gaze, pictures, communication boards, speech generating devices) to be included when assessing an individual's classification. In this way, the CFCS is inclusive and descriptive for individuals who do not vocalize to communicate. The CFCS also takes into account familiar and unfamiliar communication partners [15]. An individual who communicates at a CFCS level it is known as an "effective sender and receiver with unfamiliar and familiar partners". The individual is able to communicate at a comfortable pace, send and receive information with familiar and unfamiliar partners, and any misunderstandings are easily corrected. An individual who communicates at a CFCS level II remains an effective communicator, but the pace of communication is slower. An individual at this level is known as an "effective but slower paced sender and/or receiver with unfamiliar and/or familiar partners". The primary difference between a level I and level II communication functioning is the pace of the communication; however, both are effective at sending and receiving information. An individual who communicates at a CFCS level III is known as an "effective sender and receiver with familiar partners". The primary difference from CFCS I and II is that communication is effective with familiar partners, but

is usually not effective with an unfamiliar partner, due to decreased intelligibility. At CFCS level IV, an individual is an "inconsistent sender and/or receiver with familiar partners". An individual may occasionally communicate with familiar partners, but it is the inconsistency of this interaction that makes the distinction for level IV compared to level III. An individual who communicates at a CFCS level V is a "seldom effective sender or receiver even with familiar partners". This is in contrast to a level IV where there is inconsistency with communication; a level V consistently has ineffective communication.

Alternative and Augmentative Communication (AAC)

Alternative and Augmentative Communication (AAC) refers to all the methods and means of communication designed to assist / replace speech (or / and writing) when these are affected. Augmentative communication indicates communication methods that can be used to accompany an impaired speech for improving transmission and message understanding, and thus improving communication itself. Alternative communication relates to methods and means of communication used to completely replace speech (or / and writing) when it can not be produced. In line with the position of ASHA (American Speech-Language-Hearing Association) from the annual publication of the Association [1], AAC intervention is multimodal, so that it appeals to the individual communication ability as a whole, including any residual speech or vocalization, gestures, signs or other means of sustaining communication. An augmentative and alternative communication is "an integrated group of components, including the symbols, communication aids, strategies and techniques used by the individual to support communication" [1], this definition emphasizing the use of multiple modalities and components in the communication process. Alternative and augmentative communication subsumes any device, system, method, which improves the ability to communicate for a person with a communication disability. While AAC is often used to refer to formal communication devices and communication systems such as the manual signs, communication boards and speech generating devices, it also includes less sophisticated modes of communication such as vocalizations, facial expressions, idiosyncratic gestures. Alternative and augmentative communication is especially needed when a child acquires speech normally and there is a significant delay in development, but it can and should not simply become a substitute for how the child currently communicates. AAC is

needed to support communication and to replace only the items that are unintelligible, socially unacceptable or dangerous for the subject or those around him. Ideally, alternative and augmentative communication includes more than one system of communication, so that the child may use the most appropriate depending on the people he communicates with, the circumstances and the activities he is involved with. Very often, one of the means of communication in an AAC program is speaking itself. So during AAC interventions, subjects will be encouraged to use various methods and appropriate means in various situations and with different communication partners. This follows the principles of total communication startegies and it implies that AAC users will use multiple methods of communication to achieve the most effective communication possible [44]. Alternative and augmentative communication is a kind of intervention that uses manual signs, communication boards with symbols, devices that produce synthesized voice, all these whilst trying to incorporate all remanent communication skills of the child. These skills can include any remaining speech or vocalization capacity, gestures, manual signs, ability to use communication boards and electronic devices for synthesizing voice. Some children do not have any conventional way to communicate and express their needs and desires, and sometimes they do that in a socially unacceptable manner, for example, aggressive, destructive or self-stimulating actions. Alternative and augmentative communication can replace these unacceptable forms with conventional means of communication. In the same time, alternative and augmentative communication helps to increase access to learning activities and thus improves cognitive development of the individual.

AAC can be classified as manual signs and symbols. Manual signs refer to prescribed or agreed systems of hand shapes and movements, body positioning, and facial expression, and include formal sign languages often used by people with hearing loss. Depending on the severity of motor impairment, children with CP can be precluded from the use of a full sign language as an effective mode of communication, although they may still use a range of approximated signs alongside other communicative modalities. More typically, intervention with children with severe motor impairment aims to establish the use of symbols to support communication. Symbols refer to graphic or object representations of language. Examples of symbols used by children with CP include pictures and photographs, with orthography representing the

most advanced graphic symbol system. By selecting and signalling their choice of symbol, children are able to communicate meaning to their communication partners. Children who have yet to develop literacy, or who experience difficulty in this area, are commonly provided with symbol sets or symbol systems. A symbol set is a vocabulary or glossary of language terms represented in graphic form. Symbol systems tend to be more complex and have their own structural rules where, for example, different combinations of symbols or symbol elements can be combined to generate 'grammatical' language units. Children with significant learning disabilities who have not developed understanding of the symbolic nature of pictures, photographs or graphic symbols may be supported in their understanding of language and their expressive communication through the use of 'objects of reference' in frequently occurring everyday activities. An object of reference is a tangible symbol which can have particular or individualised meaning associated with it. The symbol, often an object, can give the child information about activities, people, events which may not otherwise be available to them. For instance, smelling a certain air freshener may signify an imminent car ride, or feeling a spoon can signal time for dinner. Symbols are organised on high-tech and low-tech communication aids. High-tech communication aids are electronic devices that produce either digital (recorded) or synthetic (artificial) voice output. These software- or hardware-based communication aids are also known as speech generating devices (SGDs) or voice output communication aids (VOCAs). Professor Steven Hawking is an example of a successful adult user of a high-tech VOCA. In recent years, high-tech AAC has mirrored wider technological trends, with increasing use of specific communication aid software on commercially available devices such as mobile phones and tablet computers. Such devices may require some modification (louder speakers, protected screens, rugged cases etc.) for use as AAC devices, but it is possible that children and young people may view such mainstream and apparently 'desirable' devices as more acceptable than other systems in relation to their self-image. Low-/light-tech systems are paper-based books or charts of pictures, photographs, graphic symbols and words. Such systems can be created by hand or with the aid of specific software and templates designed for this purpose. The introduction of light-tech systems is a common starting point for exploring AAC intervention with children, families and schools. Where a high-tech aid is provided, it remains important to maintain and develop a low-tech system, to ensure

availability of a communication system at all times, including those times when the use of the high-tech aid is not possible or practical.

AAC systems are based on physical or virtual boards and use text, figures or icons representing everyday activities, persons, actions, places and objects. In order to communicate, children should select these images or icons. Besides there being a number of hardware solutions to assist people with communication disorders, there are still many unanswered questions related to how effective these solutions are [13]. In addition, a problem encountered in the literature is the difficulty of evaluating the solutions proposed in cases of cerebral palsy. As can be seen in Caltenco, Andreasen Struijk, and Breidegard [6], it is usual to find three, two or only one participant evaluating the solutions. In fact, this is a difficult and delicate task, where the results take some time to be reached and strongly depend on human factors. Also, according to Hornof (2009), not enough guidance is available on how to directly collaborate with children with disabilities as partners in the design process of assistive technology solutions. For Borges et al. (2014), methodological aspects for the inception, construction and evaluation of high assistive technologies, based on user-centred design, are still missing.

Augmentative and alternative communication AAC covers all forms of communication (not only speech) used to express needs, desires and ideas, and includes facial expressions, gestures, symbols, images and writing [1]. AAC solutions are generally classified under the criteria of use or non-use of communication devices. The latter case basically involves gestures, hand signals and sign language [1]. When using communication devices, AAC can also consider the use of supplementary materials, such as communication boards based on letters, symbols or pictures. It may also be related to picture books, or textured cards using Braille, for example [37]. AAC systems may be pictorial or linguistic. Pictorial systems use photographs, movies and drawings, among other pictorial elements, to aid communication. The most important feature is that pictorial symbols have an isomorphic relationship with their constituents. For example, to represent a ball, a round symbol shaped like a ball is used. This type of system allows communication without sharing the same code or the same language conventions [20]. On the other hand, linguistic systems use abstract and arbitrary symbols to express their desires. They do not map or depict the shape of the entities they represent. As a result, these systems are capable of representing anything at all. But, in this case, interlocutors must share the same code

conventions. Examples of this type of system are the Bliss™ system and the sign language for deaf [2]. In general, the AAC process involves the following steps: (a) symbols representation, (b) selection of desired symbols by users, (c) sentences construction, (d) transmission and (d) showing/speaking the messages using a physical or an electronic communication board [22].

AAC solutions are composed of no-tech, low-tech and high-tech elements depending on the involved technology [23]. Gesture and sign languages are examples of non-tech solutions, as stated previously. On the other hand, low-tech solutions do not involve electronic components but high-tech solutions do, commonly based on standard computers or mobile devices. Software for language development and dynamic communication displays are examples of high-tech solutions.

Vocabulary for language development is an approach related to vocabulary organizations, based on language development, such as the Talk Board [41]. This solution is based on the perspective of a typical conversation, taking into account person, queries and tense, leading to a particular set of phrases that can be chosen and spoken by the system. Typically, a set of phrases could be selected by only one switch selection [9]. On the other hand, dynamic communication displays are graphical interfaces. These solutions bring higher flexibility in constructing phrases by changing the selection set displayed when any choice is made. For example, a general selection set may consist of categories such as greetings, food and work. If an element of any category is chosen (using a switch or by scanning, for example), then a new selection set will be displayed to the user [9]. The nature of these solutions also allows the user to configure size, colour and arrangements of symbols. Particularly, symbols always appear in the same position on the screen, as would happen on a physical board. Boardmaker is another well-known AAC solution. This software lets the educator create print materials, such as communication boards, based on picture communication symbols (PCS) and many other pictures and graphics and also adds sound, animation and video to activities to use on the computer. Boardmaker explores vocabulary software for language development and also communication displays, such as Dynavox solutions. Some solutions explore the use of alternative human– computer interfaces. Vanderheide [42] proposed an AAC system integrated to a webcam computer that captures the movements of the head in order to select symbols on the screen. The system develops the construction, validation and transmission of messages

based on symbols and synthesised speech. The solution was evaluated in an entity that provided services to persons with cerebral palsy, and only stated some observations concerning the difficulties of properly configuring the system resources for each user. These authors mention the feasibility of using the solution, but emphasise that various aspects of the system need to be improved, such as the quality of the synthesised voice, for example.

Another related work uses a semantic approach in which the verb is the centre of building sentences. The system uses word prediction during the dialogue, based on historical and thematic messages. Navigation between the words requires a single key selection, based on rapid serial visual presentation (RSVP) [24]. The input signal can be sent by any input device, such as a button, a snap, a muscular movement or a brain wave. The proposal was evaluated by users with healthy motor skills, using the RSVP method and also using a manual navigation technique to select symbols. Millar, Light and Schlosser [25] proposed a solution based on a virtual communication board that contains symbols and letters. The system uses basic features of artificial intelligence. Letters and symbols can be scanned using a virtual keyboard, which are also sorted relating to the frequency of its use. The paper mentions neither the results, nor the method used to evaluate the system. Gatti and Matteucci [12] developed a Bliss predictive composition assistant for AAC. Authors use a user linguistic behaviour model adopting a semantic/probabilistic approach for predictive Bliss symbols scansion. The solution was able to predict a list of symbols as the most probable ones according to both the previous selected symbol and the semantic categories associated with the symbols based on an original discrete implementation of auto-regressive hidden Markov model called DAR-HMM. Besides the solutions briefly described in this section were identified other AAC systems, but like most academic solutions, they do not focus on several problems, typical of these systems, such as the speed of communication. The main goal of AAC systems is to enable the user to communicate his or her feelings, desires and emotions as quickly as possible. Moreover, the majority of solutions do not address the use of information that, for example, could provide a feedback for posterior expert analysis. This type of feature enables user performance to be monitored and improved over use. Another important aspect is that AAC solutions commonly do not consider alternative means for human – computer interfaces, other than the traditional mouse or keyboard. Although these are the most commonly

used input methods, children with cerebral palsy have motor dysfunctions which constrain the use of traditional keyboard or mouse. The increased cognitive cost and perceptional load in prediction-based solutions should also be noted. For example, user interaction slows down if the order of symbols changes or when new symbols or categories are added, making it hard to memories new structures. This happens even for word prediction [19]. For all these reasons, AAC solutions specifically designed for children with cerebral palsy are a real challenge for rehabilitation professionals and for assistive technology developers.

AAC program helps parents become more receptive to communication behaviours manifested by the child, and in addition it provides the child ways of communication that are more easily decipherable. Child with a deficiency of communication is prone to what is called "learned helplessness" [5]. Because adults do not expect to be informed of their child needs and desires, they anticipate and often misinterpret their real needs. As a result, because the needs are met even before they are communicated, the child may waive any attempt to make his needs known, becoming extremely passive. AAC gives the child the tools and means by which he is able to make choices and to indicate what he likes and what he does not like. In fact, giving children more control over the environment is often one of the first objectives of the communication program.

Child who is frustrated by his inability to communicate, to be understood by others, may resort to behavioural disorders to get what he wants. AAC provides children socially acceptable ways to communicate their needs and desires. All children sometimes exhibit unwanted behaviors. However, when these unwanted behaviours become so intense and frequent that affect the child's safety or ability to learn, it is necessary to intervene on them. Behavioral problems may include tantrums, throwing objects, kicking, scratching, biting others or ourselves. Self-stimulation (waving fingers or throwing eyes) is also a behavioral problem. In the past, a variety of techniques have been used to try to control improper social behavior. One of the most recent and successful methods is called "functional behavioral analysis" or "positive behavioral support" [34]. To prevent all these unwanted side effects related to communication disabilities, early intervention is through augmentative and alternative communication is indicated. Early intervention services are usually provided by a multidisciplinary team of specialists that includes doctors, special education teachers, social workers, speech disorder therapists and augmentative and alternative communication

specialists. They include various activities that can be carried out in hospitals or special clinics, in special schools or at home. The augmentative and alternative communication specialist will advise the family on how to interpret and develop the child's means of communication, on how to organize the communication within the home environment and to schedule learning opportunities through play and games that make use of augmentative and alternative language. During individual therapy sessions when the parent is also present and involved, the augmentative and alternative communication specialist will implement an individual intervention program aimed at developing the child's language functions and encourage transition to intentional and symbolic communication, so that a recovery or compensation of language function is achieved.

The provision of AAC to children is not an end in itself. Rather, AAC provision is one aspect of broader intervention practice aimed at supporting and developing the child's total communication repertoire. Intervention may take varied courses at any one time given the relative significance of multiple factors that can influence AAC related support: these factors will include child characteristics, environmental and participation related factors, family and child motivations and preferences, and the perspectives of the clinical care and school education teams. In addition to supporting children to develop their skills in the operation and deployment of AAC tools and strategies alongside their other intrinsic communication skills, intervention will seek to develop the communication skills and sensitivities of these children's communication partners (parents, peers, educationalists). As noted, interactions between children with little or no functional speech using AAC systems can differ from the normal expectations and practices observed in interaction between naturally speaking participants. Intervention with communication partners commonly aims to establish sensitivity to, and engagement with, the total range of communicative modalities used by children with CP. Intervention with children's communication partners will also seek to alter and develop the commonly observed communication strategies used by natural speakers (e.g. excessive use of yes/no questions), which can lead to impoverished communication experiences for children with CP and hence impede children's language, communication and cognitive development. Intervention practice may also be informed by the published evidence base relevant to AAC. There are often difficulties with interpretation; given the heterogeneity of the population, where evidence is available, it may not reflect practitioners' case-

loads, or participants in research may not have been suitably described. Equally, intervention aims from published studies may not mirror priorities identified by children, families and professionals. Therefore, as well as seeking out evidence relevant to multi-modal communication support, intervention is likely to benefit from evidence drawn from strategies common to a range of pediatric populations with communication difficulties.

In this work, we described one of the ways of development of active communication for children with CP – using of Augmentative and alternative communication, which used more and more in the practice of Special Pedagogy Teams all around the world. We hope that this way of communication will help more and more children with CP to discover the world and will help the world to discover the children.

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Research findings on educational needs of individuals with visually impaired in productive age in the field of lifelong learning

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Abstract. Lifelong learning is an important component in lives of individuals with visual impairment. It is a tool to gain new or improve existing, already acquired competences for professional and social life. The field of lifelong learning (formal and informal) provides a space for acquisition of new knowledge, skills, qualification/requalification and even saturation of needs and interests. Authors of this article present an overview of research results focused on identification, analysis and description of special educational needs of individuals with sight impairment in the process of further education.

Keywords: special education needs, sight impairment, further education, informal education, formal education

Introduction

Further education as part of the lifelong education is presently perceived as one of the most important factors of education of individuals in their productive age. It is the goal of present state education policy focused on development of human resources. It influences employment levels, labor competitiveness, quality of life and positively reinforces the self-perception and

well-being of individuals with health impairment. The requirements of the diversity of preffesions are growing fastly, at the same time new professions are constantly emerging, which require skills, abilities and competencies [5].

The issue of further education is relatively complex and relates to multiple documents and legislative regulations. Other factors step in as well, as are the systems of further education in various countries, the perception of individuals with health impairment by the general society, education of lay public and available information about the opportunities of individuals with health impairment in social an professional life, the network of education institutions, legislative protection and others. However, the main determinants are those related exclusively to individuals with health impairment themselves. These determinants are, both objective and subjective, mostly the type and severity of impairment, age of infliction, symptomology and manifestation of given impairment, consequences resulting from the health impairment itself, individual personal characteristics, specifics of their education, acquired competencies and many other factors.

Specifics and consequences of vision loss or limitations of visual functions of individuals

People who lost their vision in productive age have important and considerable characteristics and specifics, that occur in their lives related to this challenging situation. The knowledge of their altered quality of life and understanding what this situation entails for their adulthood, how one's life changes and what the greatest limitations of vision loss will be the key issue for special education care to become individualized and that special approaches and strategies are used to saturate their specific needs in various areas of life.

People with acquired vision loss get into various situations that significantly influence their life path and progress. Dealing with life circumstance like that is usually complicated, difficult and mostly lengthy for the individual with the impairment as well as their environment and family [16].

When a person experiences vision loss in productive age, multiple facts should be taken into consideration. An adult person already has a formed identity and self-image. The influence of a new life situation changes this, even thou a radical change of the personal structure may not occur. However, it may be assumed, that the loss of vision influences all aspects of life [12].

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Consequences of vision impairment are related to the type and severity of impairment, the age of infliction and other interacting factors that in general manifest mainly in the cognitive area and individual personality area (mainly emotional, volition and character areas).

Further lists among the specific problems of visually impaired the information deficit, problems with self-care, independence, problems with orientation and mobility, decreased safety of movement, varied level of dependence on technical tools and help from others, sensitivity to changes and alterations of environment, impaired cognitive processes, creation of concepts, influence on mental processes, speech and memory, limitations of carrier selection and professional options [10]. The consequences mentioned above can be generalized for all individuals who have a certain level of vision impairment – ranging from sight limitation to complete vision loss. We can also find further specific areas in the group of adults with vision impairment that require increased attention. For an individual in productive age, these seem to be key areas for the period of adulthood – mental area, professional area, eventually partnerships, family and social life.

Vision impairment may considerably influence the process of further education and to some degree determine the methods of special education. Impairment or loss of sight creates many obstacles in the process of receiving, processing and delivering information. This is the reason for creating the *specific education goals for vision impaired* for all levels of education including lifelong education which respect the specifics related the vision impairment itself as well as take the rules and principles of education of vision impaired individuals into account. Educators should take into account specifics and special needs of adults with vision impairment in the condition of further education, these being mainly absence, incompleteness, possible distortion of visual perceptions, decreased quality of analytical-synthetic activities related to decreased differentiation ability, decreased level of attention concentration, need for individual work pace, impairments of spatial perception, insufficient levels of reading and writing, impairments of visual-motoric concentration, impairments of color vision, limits of continuous visual work, limits in movement and physical effort, early onset of fatigue, inappropriate emotional reactions, inadequate facial expression and gesticulation and disruption of social relations. Successful execution of education requires that the educator manages both its didactical as well as methodical and professional parts. The professional area includes

the knowledge and respect of special education needs of participant in further education and the knowledge and implementation of methods of their saturation.

Further education should in full extent *accept every individual* with their needs and requirements. Acquired vision loss or impairment, both partial or complete, may cause serious insufficiencies or irreplaceable losses in the area of sensory perception. Consequently, vision impairment influences the individual in many areas, it influences their perception of their environment, it further influences their opportunities for professional success and other areas that are very important in their lives. It can be stated that vision impairment influences their quality of life in many aspects. In order for individuals with any type of impairment to lead a good and fulfilled life and to have the opportunity for complex development, it is necessary to provide these individuals with optimal complex rehabilitation, meaning to provide care in social, professional, health and mostly education areas.

The issue of further education for visually impaired people as a part of the lifelong education is given relatively little attention. An adult person, after losing their vision or acquiring severe limitation of visual perception, already possesses certain knowledge, skills or habits from the world of people with vision as well as competencies for managing common everyday life and related situations. These for example include the mastering of reading and writing in their native language, orientation in environment, relative freedom of movement, self-sufficiency, self-reliance and independence from other people.

After vision loss or limitation of visual perception individuals with this infliction must learn primary alternative forms of communication, mainly the Braille alphabet. They will be placed in the role of a person, that will have to use the long white walking stick, guide dog or a guiding person for safe orientation and mobility. Person used to driving, running, skiing, swimming etc., will suddenly face limitations in the ability to conduct many activities. Of course, we also have specific activities in mind, like the daily hygiene, self-care, care for one's appearance, domestic chores – all these activities must be re-learned again without the participation of visual perception. Professional area is a separate issue. If the person performed in a job that required visual control and after the change of life situation is no longer able to perform this job, than the complete reintroduction into successful professional functioning requires more that basic social rehabilitation but also requalification, that

can be considered as one of the forms of further education. Together with impairments and other specifics also special education needs will appear that will inevitably require saturation.

Special education needs of individuals with vision loss in productive age

The term *specific or special needs* may often trigger associations of something strange, exceptional or different. However, even adult people with disabilities, including those with vision impairment, have the same needs as the intact population, in accordance with Maslow's hierarchy of human needs. The only difference being, that because of their functional or physiological limitation, they have to satisfy their needs in different ways.

Considers special education needs mainly as the need to create and ensure such conditions of education that would allow for appropriate education of individuals, that significantly differ by their potential and individual characteristics from the common population [36].

According the scholastic legislation NG SR no. 245/2008 on education, special education need is characterized as *a requirement for adaptation of conditions, content, form, methods and approaches in education of children or students, that reflects their disability, impairment or risk and which implementation is inevitable for the development of skills or personality of individuals as well as the achievement of appropriate level of education and appropriate integration into society.*

We suggest that the definition based on scholastic legislation may be after some simplification applied to the conditions of further education. As mentioned by [37], adult individuals with various types and kinds of impairments and related special education needs have a right to demand the establishment of conditions that would provide and enable appropriate education, while still respecting their individuality and difference from intact population.

Analysis of special education needs presents the key conditions determining the success and effectivity of the education process within the framework of further education. Empirical results of analysis of education needs of adults with vision impairment in the conditions of education, for example on conditions of requalification courses, language courses, personal interest courses and other types of informal education should contribute to their identification, specification, description and consequent saturation.

Identification, analysis and description of special education needs of individuals with acquired vision loss in the areas of further education – research findings

Based on above mentioned findings and facts together with [38] we have decided to dedicate the empirical activity to *identification, analysis, followed by description of special education needs of individuals with acquired vision impairment/loss in productive age*.

The research sample of our research consisted of seven participants – attendants at the Rehabilitation center for vision impaired in Levoča selected by intentional selection.

Conditions for participant selection were age above 18 years, acquired vision loss or severe vision impairment in adulthood and active participation at the rehabilitation stay at the center.

The research sample consisted of four men and three women in the age span from 27 to 58 years. Three of the participants we from the category of *younger adulthood* and four were from the category of *older adulthood* based on [35] differentiation of adulthood from a biological perspective. Besides seven participants, with which we conducted the individual interview, we also selected a source of supplementary information with other four attendees from the center, these formed the research focus group. We conducted a personal meeting with this group, where all participants were placed in one room, together with the researcher and the group members reacted to stimuli, statements and questions from the researcher, while each of them had the opportunity to express themselves individually. We consider it important to mention, that for this group specific individual stimuli were created, statements and questions that differed in number and content, however, in the final effect had similar character as the questions that we gave during the individual interview. During research we adhered to established methodological processes as well as research ethics and GDPR regulations.

Throughout our research we used the *method of theoretical analysis of literary sources, unstructured participation observation, semi-structured individual interview, focus group method and in-vivo text coding method*.

During the primary phase it was necessary to subject data gathered in our empirical activities to sorting, analysis, systematization, process through multi-layered in-vivo coding and subsequent evaluation and interpretation. Through multiple level text coding, reverse analysis and data summarization in the result phase we achieved following results and categories of meaning:

Category 1 *Relationships and education climate* (family and environment; peers in education; educator/lector/person conducting the education).

Category 2 *Education conditions* (spatial, technical and study-material support, information availability, innovation in education, accessibility of education, availability of education courses, professional competencies of educators).

Category 3 *Human potential in education* (personal development of individuals, social contacts of individuals, self-actualization, meaningfulness of education).

We will focus in detail onto selected special (education) needs, that participant accented to be the most important ones from their perspective.

Need for maintaining good relationships with family, lectors and peers in education

Individuals with acquired vision loss need to feel supported and to have good social relationships with other people. The feeling of relaxations, safety, reliance on one another people, considerateness, absence of stress, good mood, togetherness, extending a helping hand, the ability to communicate in a friendly manner, patience, feeling of humanity and understanding from others all create a solid support system in which they can move forward and successfully take part in education. For them, it is important that even during education they are understood, treated individually, with consideration and individualization and still not be pitied but taken as equal. Professionals should master adequate approaches and expert strategies. Equally, full-valued interactions with other participants of education also provide individuals with vision impairment with positive emotions and develop self-esteem, provide strength and encouragement. Good relationships and good collective are factors that create attractive and motivating education environment.

Need for accessibility of education environment

The issue of availability of academic or education environment is relatively broad and considering its sufficient elaboration in scientific literature we will refrain from detailed description. We do however consider it necessary to focus on the need of elimination of any present barriers that could inhibit successful education of individuals with vision impairment.

Physical barriers are relatively easy to remove. However, the removal of mental, informational or communicational barriers takes much more

time, because they are related to societal attitudes towards individuals with disabilities as such. We can contribute to the continual cessation of these and to creation of conditions that would be suitable for all people, the so-called universal design for learning, by engaging in appropriate yet intensive public informing.

Need for high quality digital, spatial, material, technical and informational support in education

As mentioned in an article by [5], everyone wants to be successfull in their life and therefore she considers it important to support these individuals especially in the field of education and in the field of preparation for the labor market. Individuals with vision impairment need to have in further education as one the basic fundamental factors of education the provision of technical equipment and availability of digital and assistive technologies, mainly computers or notebooks with audio output (software providing transference of text into audio mode), mobile phones with vocal output, magnifying glass or software allowing for alteration of textual features for individuals with remaining sight (NVDA, Zoom-Text, Magic). We have also captured the need for this equipment to be present in their domestic environment. Beside the above mentioned, it is important to provide the appropriate education spaces, this means to create guiding lines, to provide markings in Braille, access and permission for guide dogs, storage spaces, study materials of superior quality with listening mode as well as alternatives, like Braille, larger font texts, text with heightened contrast and other. But according to [22] also musical sheets can be transcribed into tactile font by means of one of the most important computer programs Goodfeel, ie to create musical notation in Braille.

Need for professional educators

For adults with visual impairment, it is important to work with appropriately knowledgeable teacher/lector. As the research showed, more that completed education with a title, it is more important to them, that their educators have professional knowledge and mostly, that they are informed about what they are talking about, explaining about, that they are knowledgeable in the given field, so that it become relatively easy to comprehend. Another need of individuals with vision impairment is the requirement for professional competencies of lectors and their ability to work with individuals with vision impairment (fundamental knowledge, specifics, communication, guidance etc.), their understanding of VI individuals as equal, need for consideration and respect of their

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slower pace and using DT and AT in education, specific approaches and styles of teaching, non-discriminatory behavior, patience and others.

Need for adequate communication competencies

Communication is related to perception, cognition, emotions, the ability to read, write, express and assert oneself. The ability to communicate gives each individual the opportunity to become a social being and to explore the surrounding world. The need for relevant communicational competencies is concerning both the lector as well the participants of education themselves. Appropriate communicational competencies are key to mutual understanding and sharing of ideas of both.

Need for improvement of information availability about education

Individuals with acquired vision loss have a need for availability of sufficient resources in their environment, through which they could acquire information about possibilities of their further education.

Besides internet, for the older generation also through other types of media like TV or radio or even through personal interaction with first contact medical workers, like doctors, social workers, special education teachers or labor department employees may present a source of information.

Need for implementation of innovative education

We recorded positive attitudes of participants in our research towards innovation in further education of individuals with acquired vision loss. Statements from participants suggest that it is better for them to learn something that is presented in an interesting, innovative, different and original manner. They would appreciate the inclusion of experiential forms of education, more modern lectures.

Need for improving accessibility of education

Individuals with vision impairment expressed the need for improving accessibility of education. They would welcome a broader selection and improved geographical accessibility of education. This would make it easier for them to both follow their desires for education while still having their family nearby without the need to travel longer distances.

Need for a greater variety in education

According to participants, the present available further education is currently not sufficient. Visually impaired individuals could be able to perform a varied spectrum of professions, based on the premise that a more varied selection of education and creation of appropriate conditions saturating their special needs stemming from acquired vision impairment would become available.

Need for self-actualization in education

The need for self-actualization in education reflects the desire of vision impaired individuals to be full-fledged members of society. Even people who lose their vision in older age do not want to remain idle, they need self-expression and self-actualization. Many of them long to return to professional life and high-standard requalification is one option of further education, that provides both of these possibilities. Despite advanced age (adulthood, older age) individuals with vision impairment have the need for education, gaining knowledge, to navigate available information, to have the ability to react to current issues in society etc. The possibilities of self-realization and full-fledged professional application open up to the visually impaired individuals, especially in connection with music [23].

Need for meaningful education

This need is relatively important to visually impaired individuals as is represents a certain starting point in commencement of education, financing education and persevering in it, as well as it also influences the motivation of individual to participate in education. It is important for them to have a purpose, goal and use for education.

Need for acquiring of new social contacts

One of the reasons for education of visually impaired individuals is the need and desire to acquire new friendships, contacts and relationships. They want to satisfy their needs and re-integrate fully into social and professional life.

Need for personal development

Besides acquiring knowledge, skills and competencies, further education is a tool for development of individual's personal qualities. It creates opportunities to strengthen weaker functions of the organism and personal qualities as well as presents a chance to acquire new competences needed for future life.

Need for motivation for individuals with vision loss

We often cannot consider external motivation among individuals with acquired vision loss. Until they internally process their impairment and find mechanism to overcome its consequences, we are convinced that they will not be interested in many activities, including education itself. Internal motivation, whatever the motives stem from, is a strong driving force as well as a need for the individual to start and be active from their own conviction and decision.

Need for involvement of supporting agencies/organizations/institutions/unions

To make further education more accessible and available by all means, it is appropriate that its preparation is to be created by multiple experts, event. supporting institutions, organizations or unions, that may considerably contribute to further education of adult individuals with acquired vision loss.

Need for appropriate pace of education

Individuals with acquired vision loss are usually not able to be sufficiently flexible to participate in requalification courses or other forms of education officially provided by the labor department or other institutions. Problem presents itself in the unmanageable pace of education programs as these are mostly organized for intact population.

Need for utilization of appropriate methods, forms and approaches in further education

The labor market requires and needs educated and prepared work force. This requires use of methods, forms and approaches established in the reference field of special education that are key for further education of individuals with acquired vision loss as well. Inappropriateness and lack of effectivity of selected methods negatively influences the achievement of education goals and satisfaction of participants of education with acquired knowledge, skills and competencies.

Need for belonging in education

Visually impaired individuals need to feel as belonging in the framework of further education as well, attention from others, social interaction, that may relate to completely common life areas, not only related to content of education. They need to have satisfactory positive relationship bonds, beneficial relationships in education collectives and learn in conditions of peace, good mood and friendly atmosphere.

Conclusion

We realize, that the sum of special education needs may be considerably broader and beyond external conditions of education depends mostly on internal conditions stemming from participants in education themselves – individuals with late acquired vision loss.

These internal conditions are highly individualized and influenced by multiple factors throughout the entire duration of individual's life. This fact creates further research opportunities for exploration, identification, analysis, broadening and description of further education

needs not only of individuals with acquired vision loss but also individuals with various types and variations of health impairment acquired in various stages of individual's development.

The topic of further education of adult individuals with vision impairment is one of current issues in need of professional attention and urgently requires solutions. Realizing this urgency and other determinants of the presented issue we attempted to contribute to the scientific findings and scientific language as well as support theories related to individuals with health impairment.

We also take into account that research findings we detected may not always in all circumstances represent all individuals with visual impairment universally based on factors of their individuality, various social influences, experiences, competencies and opportunities that person may have acquired throughout their life and applied in adulthood.

However, these findings may in a significant manner contribute to the development of resolution of this issue and besides researchers and professionals, consequently the ones profiting will be the individuals with vision impairment, in the sense of improving their quality of life and support of their independence and self-reliance.

We strongly believe, that we have clarified some questions that were unanswered and delivered new findings, that will add to quality increase in processes of further education of individuals with vision impairment and saturation of their special education needs. Equally we hope to inspire further researchers in the quest for knowledge that was not encompassed by our empirical activities.

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Quality of life attributes in individuals with life-threatening illness in the context of special pedagogy in Slovakia

Abstract. Contribution deal with quality of life of individuals with life threatening illness in Slovakia. Targeted focused on the category of children with oncological illness. In recent years, we focused on research activities at individuals with life threatening illness in Slovakia within special pedagogy. In conjunction with quality of life and with education of these individuals. In these contexts, we can talk about the context of special pedagogy.

Keywords: quality of life, life-threatening illness, cancer, special educator, emotion, pre-school age, education.

Activities focused on upbringing and education of children with life threatening illness realized by a special educator, are one of the areas of support for improving the quality of life of such children and their families. Symptoms of illness and treatment are seriously interfering with all areas of quality of life and family life, including physical health, psychological health, sexuality, spirituality, social area, emotional area, self-sufficiency, cognitive area, economic background and so on. Each family is unique, its functioning is influenced by several factors: the number and characteristics of its members, the education and employment of parents, values, cultural traditions, religious beliefs, etc. Adaptation can have a different course and depends mainly on the age at which the child be-

comes disabled [10]. From the view of special pedagogy, such care is primarily focused on removing or reduction the impact of an illness on a psycho-social, emotional, and cognitive personality areas. The perception of the quality of life from a psychological point of view is very subjective and overall satisfaction with the individual's life is very closely connected to emotional dealing with it [2]. Positive effects such as the short-term positive emotions and long-term dealing with happiness affects short- and long-term positive evaluation of life events. On the other hand, negative effects as short-term negative accumulated emotions and long-term dealing with sadness, anger, frustration, leading to short and long-term negative evidence of life events [7]. Special educator through game activities with children or together with their families and adequate communication strategies, helps to create positively survived living situations and thus contributes to a positively experienced difficult period of life. Another important area of quality of life is the area of socialization. The child naturally longs for follow-up contacts, after somewhere to belong to, be useful and the illness and the resulting long-term hospitalization and isolation from social contacts, may cause various psychological disorders and social deviations and overall threatening the quality of the child's and its family's life. The most important aspects of social dimension of quality of life considers [8] to interact the individual with the surroundings and the need to self-realize an individual to perform a social role for which it is intended. Child in pre-school age with illness loses the opportunity to develop relationships with their peers in a natural environment such as a kindergarten and is limited to obtaining contacts in the hospital environment. The involvement of such a child in common activities, together with other children can help to develop social skills and emotional abilities and can lead to the creation of a sense of belonging and satisfaction of self-realization needs. It is important to note that a family of such a child is going through a very difficult period of life and often focuses attention only to a child with illness and forget their own needs. As a result of a child orientation with illness and freight treatments, the family can lose his socio-economic status, comes to social contacts and employment, which can cause the emergence of inferiority, apathy, depression, or loss of life perspective. High importance, in the ability of an individual to achieve well-being and satisfaction they also have individual personality traits, such as positive affectivity that are most often associated with dealing with feelings of well-being, confidence, emotional stability, self-control, resilience

and other features, which is becoming more commonly referred to as emotional intelligence [1]. With a psycho-social and emotional experience of the child, the cognitive concept of subjective quality of life assessment is also related. Life-threatening illness and treatment can also negatively affect the cognitive part of personality, for example, at the level of imagination, memory, or attention. These specificities in cognitive abilities can interfere with different areas of the individual's life, from the ability to address common conflicts, communication or acquiring new knowledge in upbringing and education and so on. The illness can reactivate previous unresolved difficulties and can create such stress that its coping skills are limited. Kübler Ross [3] assumed that children to a high stress burden as a life-threatening illness, passes a series of five (now well known) stages: denial, anger, bargaining, depression, and acceptance. Rational - cognitive acceptance of the illness directly affects emotional and behavioural reactions aimed at handling illness, with this relationship is reciprocal. Among ideas, emotions, behaviour, and physical reactions there is a complex interplay in which no area has a primacy and in common involved in the overall quality of the life of an individual with the illness [5]. It is important to remind that in Slovakia, a special educator has its representation in the educational activities of children with a life limiting illness during hospitalization, but not after release to the child in palliative care. However, in terms of improving the quality of life of such children and their families in palliative care, it is important to support the continuous education of special educators in the field of physical disabled, sick and disabled with the accent for the pedagogy of sick and also promote their palliative care education what should be in practice - to extend such care for special-pedagogical support.

Quality of life is the subject of the interest of several research in the world and in Slovakia. In recent years, research in Slovakia began to focus on the quality of life of individuals with life-threatening illness in conjunction with education, we can say about a special-pedagogy context, as child, pupil, teenage and adult with life threatening illness is the subject of the pedagogy of physically disabled, sick and health impaired. Progress in modern medicine has increased survival chances and opportunities to improve the health importantly, these children and students can return to school, school groups, and their normal lives [9].

In the following section, we would like to present research focused on emotionalism as one of the attributes of quality of life in children of pre-school age.

Pre-school age represents a significant period for the development and forming of the child's emotional world. The quality of emotional life in this period is an important precondition for further emotional development of child. Impulsivity, lability, and suggestibility of child emotion creates its own emotional world of a child in which the emotions are as a filter of all knowledge, increasing and expanding the needs and interests of the child, affect the quality and durability of acquired knowledge. All the child is experiencing, raises various experiences, motives, desires in his soul, and they affect his emotional attitude to people and the world and decide on a dominating pallet of his future emotional life [4]. The defence of the child against a negative emotional experience is their suppression that, according to psychologists just transforms into other forms that will continue to be harmful in the form of scary dreams, anxiety, depression, psychosomatic difficulties [4]. The oncological ill child of pre-school age is aware of the presence of its illness and intensively experiencing it - a physical and mental burden significantly affects the emotional world of the child. The emotional burden can also lead to inappropriate manifestations in the field of children's behaviour, which significantly increases the demands on professional and personal competences of a special pedagogue. Inappropriate manifestations of behaviour in the child are affecting the psychological well-being of other children and disturb a positive socio-emotional climate in the kindergarten.

The aim of combined research, which was implemented in cooperation with Drienova, was encouraged and stimulating the development of the emotionality of oncological ill children and equally to direct their emotional growth. We were based on the knowledge that the emotional skills will increase the emotional resistance and stability of the child. What the oncological ill child will become more stable, the better to be able to balance with difficulty, failure and various stress situations that brings oncological illness, demanding treatment, and long-term hospitalization. In addition to the intention, we assumed that the implementation of the proposed set of activities in the education of oncological ill children will allow us to achieve positive changes in socio-emotional climate in the kindergarten class at the medical facility, reduce or reduce emotional problems or behaviour problems and improve the cooperative functioning of the child in education. We used a standardized questionnaire behavioural children's pre-school ages from McGuire and Richman, direct observation, and case to the realization of research.

Through that questionnaire, we have identified the occurrence of emotional problems and problems in behaviour in oncological ill children in kindergartens in health facilities and in children who attend ordinary kindergarten. After processing data and evaluation of the overall scoring in the children from the ordinary kindergarten, we compared the occurrence of emotional problems and problems in healthy children and in children with oncological illness undergoing intensive treatment in children. Based on a detailed analysis of the score in the individual questionnaire items in the oncological ill children from the kindergarten, we detected the frequency of the occurrence of specific manifestations, manifesting emotional problems and problems in behaviour. Following application of the created stimulating program for the development of emotional intelligence, we have also implemented the output diagnosis of behaviour in the selected group of oncological ill children with several serious emotional problems and / or problems in behaviour. The questionnaire method was also used when assessing the effectiveness of the stimulus program created. The research sample consisted of 6 children with an oncological illness between the ages of 4.5 years to 6 years attending the kindergarten in a healthcare facility, which, at the time of research, undergoes long-term intensive treatment in the clinic of children's haematology and oncology in Bratislava. A group of children selected for the research sample was in terms of their age, determined by medical diagnosis and ordered protocol method of therapy heterogeneous. When choosing a research sample, we have determined the following criteria:

1.	Personal emotional problems and/or behaviour problems were identified in the child's input diagnostics.
2.	The child undergoes intense treatment of oncological illness requiring continuous long-term hospitalization.
3.	The child is 4-6 years old.

The set of activities to stimulate and stimulate the development of the emotionality of a child with cancer consists of 35 specific proposals for activities supporting the development of the emotionality of a child with cancer in the intrapersonal as well as interpersonal level. The goals of our proposed activities are:

- create and support a favourable socio-emotional climate in the group of children;
- stimulate children's emotionality and direct their emotional growth;

- to develop the child's personality as a whole on the intrapersonal and interpersonal level in terms of cognitive, affective and psycho-motor;
- to enable children to gain the experience of "themselves", to experience pleasant feelings and emotions necessary for their personal development;
- express their own thoughts, feelings, feelings, experiences and desires through verbal and non-verbal communication;
- to form and develop empathy at the elementary level;
- create fluent relationships with children and adults based on mutually maintained emotional attachment.

We examined whether emotional and / or behavioural problems were more common in children with cancer in kindergartens in hospital undergoing intensive anticancer treatment in primary schools than in children attending regular primary schools.

When comparing the results of the total score in the questionnaire in oncological children attending kindergartens in hospital at the time of our research and in children attending regular kindergartens, we found that in oncological children in kindergartens in hospital undergoing intensive treatment of cancer in behaviour than in children from a regular kindergarten. After evaluating the results of the total score in the questionnaire in children with cancer in kindergartens in hospital, we found that most of the observed children with cancer undergoing intensive anticancer treatment who attended kindergartens in hospital at the time of our research and / or behavioural problems. After evaluating the results of the score in the questionnaire for children with cancer in, we found that difficulties with concentration of attention and inappropriate level of activity kindergartens in hospital that affect the overall functioning of the child in the educational process occur in most children with cancer visiting kindergarten in hospital. After applying the set of activities proposed by us, we performed output diagnostics of behaviour in children from a selected research sample who participated in the implementation of our activities. We investigated whether the application of a set of activities in a selected group of children had a positive effect on the emotional and social behaviour of a child with cancer undergoing intensive anticancer treatment, on the overall functioning of the child in the educational process.

The results of our research showed that by applying the set of activities created by us aimed at supporting and stimulating the development

of the child's emotionality, we managed to reduce or alleviate the man-ifestations manifesting emotional and behavioural problems in all chil-dren from our selected research sample. We managed to achieve positive changes in the level of attention concentration and level in some chil-dren from the selected research sample. Positive changes in the level of attention concentration were achieved by applying a set of activities to one child from the research sample and positive changes in the level of activity were achieved by applying activities to three children from the selected research sample. From the results of the research, we can state that the implementation of the set of activities created by us effectively influenced the socio-emotional side of the personality of a child with cancer. When comparing the results of the score in the questionnaire achieved in the input and output diagnostics of the child's behaviour, we found that children from the selected research sample, after applying a set of activities, achieved positive changes in the category of emotional and behavioural problems. This means that the behaviour of children with cancer has been alleviated or reduced by manifestations of emo-tional and / or behavioural problems. When comparing the scores in the questionnaire achieved in the input and output diagnostics of the child's behaviour from a selected research sample, we found that in the category of overall functioning of the child in the educational process, we achieved positive changes in several children. Specifically, in four children, positive changes in the child's functioning in the educational process were confirmed; in two children, no changes occurred in the given area. In a deeper analysis of the score results in this category of problems, we found that positive changes in the level of attention con-centration were demonstrated in one child from the research sample af-ter the application of the set of activities. We achieved positive changes in the level of activity in 3 children from a selected research sample.

After the implementation and evaluation of research, the aim of which was to verify the effectiveness of our set of activities stimulating and stimulating the development of emotion of a child with cancer, we allow to formulate recommendations ourselves based on our research findings and empirical experience gained in implementing activities with a selected group of children with cancer. Recommendations:

- we recommend regular implementation of play activities using the method of emotional inventory in order to strengthen the positive feeling in children with cancer so that they pay more attention to positive things, learn self-control;

- regularly include emotional retuning in the daily routine through fairy tales, listening to music, dancing, singing, etc.;
- regularly include activities with elements of art therapy, music therapy, creative drama in education;
- make creative use of the world of stories and fairy tales;
- regularly implement relaxation games and exercises to regenerate the body, defend against stress and to experience positive feelings in children;
- alternate activities requiring a longer focus of attention with relaxation moments and activities to release the accumulated tension;
- create opportunities for children to control their emotional discharge;
- to provide children with a space for artistic expression of emotional experience using art techniques, musical movement expression;
- include games and activities aimed at developing cooperation, first games and activities in pairs, gradually in a group with a smaller number of children;
- often include interactive games and exercises using verbal and non-verbal communication (role-playing exercises, active listening exercises, problem-solving exercises);
- specially to provide psychological support to children - to approach children with love, with a great deal of patience, empathy, and acceptance.

The results of our research showed that by applying our set of activities aimed at supporting and stimulating the development of the child's emotionality, we managed to achieve positive changes in all children from the selected research sample – alleviation or reduction of manifestations manifesting emotional and behavioural problems. We achieved positive changes in the level of attention concentration and activity level in some oncological children from a selected research sample.

Working with children with cancer requires a thorough knowledge of the specifics of education, close cooperation with medical and health staff, parents of children and other professionals involved in the care of children with cancer. The implementation of the research was hampered for us by the fact that we do not currently work directly in this department and the organizational management of the research was very demanding due to the rapidly changing health status of children undergoing cancer treatment. These changes in children's health required situational decision-making. Despite the complications, we managed to

implement the proposed activities with all the children selected for our research sample. The results of the research proved the effectiveness of the activities we created, which we managed to alleviate or reduce the manifestations manifesting emotional problems, problems in social relationships in all observed children and we also achieved positive changes in the overall functioning of the child in educational process.

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Factors that affect music education of visually impaired in Slovakia

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Abstract. The aim of the scientific study is to point out the current state of music education for the visually impaired at music schools and conservatories in Slovakia, as well as the factors that affect its level. Emphasis is placed on the current situation of the use of Braille music notation in the music-educational process. In the introductory part of the study, the authors characterize contracted terms. The empirical part of the study is based on the methods of qualitative research, from data obtained through interviews. The research is focused on music and art education of visually impaired individuals in Slovakia. The evaluation of the results is based on the content analysis of the interviews. The research results point to a reduced interest of the visually impaired in music education, on the other hand they emphasize the importance of the use of music education for visually impaired people, which can become a key aspect influencing internal motivation and interests and can also stimulate choices of the future profession.

Keywords: visually impaired, music education, Braille notation, music technology.

Introduction

For visually impaired students, music is important because it plays an essential compensatory and integrative role in their lives. Orientation of education of visually impaired students to various fields related to music opens up opportunities for full professional employment and the opportunity to integrate into society [1]. History points to the fact that most visually impaired individuals have worked in the music profession in the past. In the process of acquiring the knowledge of their students, teachers atttribute significance to music and art education [3, 6]. Although blind and otherwise visually impaired music teachers have always worked in field of music education in Slovakia and still work today, we do not know any Slovak study that would deal with this issue. This is probably due to the fact that since the time of the Czechoslovak Republic, professional music education of the blind and visually impaired has been concentrated mainly in Prague at the Jan Deyl Conservatory [9, 10]. For this reason, music teachers in Slovakia do not have optimal conditions for gaining knowledge about methods and methodical approach in music education for the visually impaired.

Scientific relevance

In Slovakia, the system of care for visually impaired students who are interested in learning to play a musical instrument or singing is implemented at all levels and types of art schools. Art schools in Slovakia represent a comprehensive system of education, which provides the young generation with the opportunity to develop their talents in one of the creative disciplines. The individual components of this system enable the student to continue in artistic training at a higher level and gradually qualify for the professional performance of the music-artistic profession. The basic art school provides basic art education, prepares students for the study of art education in secondary schools and conservatories, and also prepares students for study at universities with a pedagogical or artistic focus. Since 2009/2010, a curriculum for basic art schools has been developed. It is framed by the compulsory content of education, which is to develop the key competencies required for a certain level and type of education guaranteed by the state and is developed according to the principle of continuity of primary art schools (primary, lower secondary), whose programs follow each other. It can be applied through various organizational forms and teaching methods, allows the modification of content for basic art schools and enables the education

of pupils with special educational needs [4, 24]. Mutual cooperation of all participating parties, communication with the pupil's parents, with other classmates, the level and quality of support measures are essential [11, 16]. In the primary art school, the educational process of visually impaired pupils is carried out according to the educational program for primary art education and the educational program for secondary art education. The field of music includes piano, flute, accordion, guitar, keyboard playing, music theory, chamber music, four-handed playing, choral singing and Braille notation, which is an important part of music education [21]. Education of visually impaired pupils at conservatories is implemented through the educational program for lower secondary education according to §16 paragraph 3, letter b), educational program for upper secondary vocational education according to §16 paragraph 4, letter d) and according to the educational program for higher vocational education according to §16 paragraph 5, letter b). Integrated students with different types of visual impairment meet the same educational goals as intact students. The general educational goals and competencies of the pupil in specific areas of education are adapted to the individual needs of visually impaired pupils, but care is taken to ensure that the overall results of a visually impaired pupil are in line with the profile of a graduate of upper secondary and post-secondary education with regard to visual impairment. After graduating from the conservatory, the graduate has the opportunity to apply in the labor market as a music teacher at a primary music school, or can continue his education at the Academy of Performing Arts. As at music schools also at conservatories, the music department includes piano, flute, accordion, guitar playing, music-theory subjects, chamber music, four-handed music, choir singing. Braille notation is an important part of music education [22]. Visual impairment will be reflected in the music-educational process itself on several levels, and these consequences will be strongly linked to the type and degree of visual impairment and the age at which this impairment occurred. "For the blind, education takes place mainly through an auditory and tactile analyzer. Written speech is delivered using Braille and typhlo techniques and technologies. In the case of partially sighted people, this is, according to the preserved visual possibilities, mostly visually by means of optical devices, which help to properly enlarge graphemes, images so that these correspond to the individual possibilities of the pupil" [13].

For blind students, when mastering Braille music notation, it is necessary for the student to be educated in music theory and playing a musical instrument at the same time. This will speed up the process of gaining musical autonomy. The student begins to be independent only when he / she acquires all the features of Braille music notation and masters the technique of reading a embossed dot font notation and then playing a musical instrument [18].

In foreign literature, it is stated that Braille notation places higher demands on adoption for visually impaired students [1]. However, Braille notation through another system of notation (using intervals and music-theoretical concepts and categories) will allow the blind to think through music harmony and concepts from the beginning. Visually impaired musicians who learn a piece of music by auditory interpretation without learning to read Braille music notation have the same problems and disadvantages as sighted musicians who do not know notes and play only by listening [15]. In both cases of illiterate musicians, learning new songs is fully dependent on others. For many, however, this choice is easier and faster. Most music teachers do not have time, experience with Braille music notation, and therefore rely on the acquisition of musical score through the students' repeated perception of a musical recording or the pre-recording of musical sections of a composition by a teacher [14].

As Németh, Čermanová [17] state when "illiterate musicians seeing whether the blind want to learn to read and write notation in the future, whether in Braille or standard, learning itself will require a huge amount of patience and will, because as a result the acquisition of bad habits associated with auditory interpretation can be of great difficulty to individuals, and learning will not be as easy as that of individuals who have learned it from the beginning."

Braille notation as mentioned by Bertoni, Bortolazzi, Nicotra [2] "is currently relatively stable worldwide thanks to the experience and solutions proposed by experienced blind composers and musicians worldwide. The development of Braille notation since its discovery by Louis Braille has been transformed and adapted to the conditions in the given countries. Due to the differences in national languages and the level of cultural conditions of the countries concerned, countries needed to create their own specific transcript in that language and their own teaching methods. Today, advances in technology and the development of information technology have helped to bring together various writing

systems from different countries in an effort to create a single, standardized transcriptional Braille music notation system that can be used on a global scale. In connection with this idea, in 1997 the World Committee for the Blind published the International Manual for the Use of Braille Notation - "International manual for the use of Braille music writing."

In nearby countries, there are several methods for teaching Braille notation, which are available in both versions, in print version and in the Braille music notation. For example, if a blind teacher teaches a sighted student, Braille methods or specific notes are transformed into print version and vice versa [6].

In Slovakia, there is a method of teaching Braille music notation in one version in Braille [17, 23]. Some blind music teachers explain this by saying that many years of experience, both practical and theoretical, are needed to create a new methods in the print version. Although they recognize that the new methods would bring some changes to the music education of visually impaired students, the system of our music education does not create suitable conditions for this [10]. The problem is that only few music teachers know Braille notation. Most of them are blind teachers who graduated from the Jan Deyl Conservatory in Prague, or special educators who teach music education at primary schools for visually impaired students [7, 10]. At present, no one from Slovakia has shown interest in studying music at the Jan Deyl Conservatory [19].

Abroad, they solve this situation by using modern music technology. In music schools, it is often an applied musical tool for learning and writing notes, composing music, recording and subsequently listening to them for visually impaired students [8]. As Adamek and Darrow [1] point out, music applications, programs, and software fall into two categories: software that transcribes sheet music into Braille, or software that allows to create and manipulate musical sounds - compose, instrumentally arrange, and record own music tracks.

The advantage of these programs is fast and efficient access to any music composition, to instantly convert a black-printed score into an embossed dot font. Another advantage is to zoom in up to ten times with the zoom function and zoom in detail on the location of the notes on the score, identify their position, and rhythmic diction according to the shape of the notes. The programs also allow direct writing of notes to the notes via a special pen or the touch of a finger. The privilege is also software that offers the opportunity to listen to a composition from a musical score [20]. The disadvantage of these computer programs is the

financial cost. Another drawback is the cultural difference in the writing of standard music notes in Braille notation. Each country has its own editorial specifics and therefore it is often a problem to decode a specific way of writing. Many experts - music teachers with visual impairments state the need to have their own editors and publishers for Braille music notation to maintain the quality of the national music transcript in favor of the most professional interpretive expression of visually impaired individuals [18].

Although blind and otherwise visually impaired music teachers have always worked in Slovakia and still work today, we do not know of any Slovak study that would deal with this issue. This is probably due to the fact that in the past, professional music education of the blind and visually impaired was carried out in the Czech Republic. The question therefore remains whether the music schools and conservatories in Slovakia are sufficiently prepared for the education of visually impaired students. This concern in particular to the competence of music teachers in the use of Braille music notation for visually impaired students, as well as specific methodic and didactic procedures in the acquisition of artistic interpretation in playing individual musical instruments.

Research findings

The main goal of the research was to point out the interest in music education of visually impaired students in Slovakia in order to develop the possibilities of their full professional use in individual music disciplines as well as the opportunity for social inclusion. The research analyzed the current state of music education for the visually impaired at art schools and conservatories in Slovakia, as well as the factors that affect its level. The current situation of the use of Braille and modern music technology in the music education process is emphasized.

The empirical part of the study is based on qualitative research, data obtained through a semi-structured interview. The questions were enriched with additional questions during the interview. The semi-structured interview included three basic areas focused on preferences in the choice of music department, future profession, obtaining data on the methods and means used by music teachers for visually impaired students. The length of the interviews was 30 minutes. The collection of data from the interviews was followed by a process of transcription and detailed analysis of the texts. For the process of evaluating the obtained data, we chose open coding, which is a sophisticated analytical

technique aimed at detailed work with the text. In open coding, the text was divided into semantic units, each unit was assigned a code, and a fragment of the text named in this way was further worked on. Terms and categories were created based on the meaning of the text and a new group of terms, categories and concepts was created, which were then grouped according to similarity and formed the basis for defining the relationships and connections between them. The analysis of the data was followed by their interpretation. In the research, we defined three research questions:

RQ1: What are the music interests of visually impaired individuals in the field of music education?

RQ2: What methods and means do music teachers use in the music education of visually impaired students?

RQ3: What is the most common work for visually impaired individuals who are graduates of music schools / conservatories?

The research group consisted of five participants, of which three teachers work at music schools in Slovakia and two teachers teach at the conservatory, one in Košice in Slovakia and the other teacher in Prague at the Jan Deyl Conservatory, the only professional music and art educational institution for the visually impaired. Of the total number of five participants, three were women and two were men. The average age of the participants was 50 years.

Participant No. 1 is a blind music teacher who has been working at the Elementary Art School in Levoča for 36 years. He currently teaches piano and leads the Children's Choir, whose members are visually impaired students. They have already achieved a lot of success with the choir and have performed many times at home as well as abroad. He currently educates 20 visually impaired children.

The second participant is a blind music teacher working at the Private Music School Múza in Humenné. She is a graduate of the conservatory in the field of piano. She also studied at the Faculty of Education in the field of Slovak language and literature in combination with music education. She does not currently teach any visually impaired pupils, in the past she educated several visually impaired pupils.

Participant No. 3 is a blind music teacher at Music School in Zlaté Klasy. He is a graduate of the Jan Deyl Conservatory in Prague, majoring in accordion playing. Since 1973 he has been teaching accordion at music school in Zlaté Klasy. As part of his pedagogical work, he taught several visually impaired students.

The fourth participant in the research is a music teacher, pianist and harpsichordist, working at the Conservatory at Timonova 2 in Košice. She graduated in the field of piano at the Academy of Performing Arts in Bratislava. In the past, she taught two visually impaired students playing the piano.

Participant No. 5 was the director of the Jan Deyl Conservatory in Prague, an opera singer and teacher. She graduated in opera singing at the Academy of Performing Arts in Prague, and teaches visually impaired students in opera singing.

The interviews were always held in person. To maintain anonymity, participants are identified by a serial number.

Results and Discussion

In the following part of the study, we present a summary of research results according to defined research questions. Partial questions are always listed first, followed by individual categories. Using open coding, several categories have emerged that will try to answer partial research questions. The following is an interpretation of the categories, which contains direct, authentic quotes from the participants.

RQ1: What are the musical interests of visually impaired individuals in the field of music education?

Category 1: Music instrument preferred by visually impaired individuals in their studies at music education institutions (music school, conservatory)
Most participants stated that most visually impaired individuals play the piano. The piano is one of the few musical instruments on which visually impaired students can orient themselves. The black keys are a great help in navigating the keyboard. The blind compensate for vision loss with a tactile analyzer. The increased sensitivity of the hands of the blind is manifested by increased accuracy and widening of the range of their movements. Thanks to this ability, the blind can actively interpret even more technically demanding music compositions. Another compensatory factor is hearing. The visually impaired have excellent hearing and are therefore able to imitate the heard melody or harmony on the piano above standard. They are also helped by the memory, which they have been intensively practicing since early childhood.

Another musical discipline that visually impaired individuals often choose is singing. As stated by participant No. 5, the visually impaired through excellent hearing abilities can easily imitate melodies even with more demanding vocal technique. They have the prerequisites to acquire a cultivated vocal expression, during their studies they get ac-

quainted with the physiology and methods of voice development, they learn to analyze their vocal expressions and at the same time move towards the development of vocal and recitation skills. From the information we contained from interviews with music teachers, we found out that in the past, visually impaired students also played the accordion or the recorder.

The individual answers also reflected the preferences of music genres for visually impaired individuals. Many visually impaired musicians, especially in the United States, like jazz, blues, or pop. In Slovakia, visually impaired students studying at art schools and conservatories in Slovakia, prefer mainly classical, popular or rock music, but also devote themselves to folk music, they are often members of various folklore ensembles.

Category 2: Interest of the visually impaired in education in the field of music at conservatories and universities

Most participants state in their answers that the interest in obtaining higher professional (music) education or higher education is low. Musically gifted individuals with visual impairments can acquire a quality music education, especially at music schools. Higher professional education can be acquired at conservatories in the form of integration, university education in the field of music can be obtained, for example. at the Academy of Performing Arts in Bratislava, at the Academy of Arts in Banská Bystrica, at the Ján Albrecht Academy of Music and Arts in Banská Štiavnica, or at other universities with a music department. However, within the statistical records (Osvaldová et al. 2020), we did not record a single visually impaired student at the mentioned higher education institutions. Among the important foreign schools that offer quality visually educated individuals with visual impairments are the Jan Deyl Conservatory in Prague. From the information provided by participant No. 5, the director of the conservatory, we gained knowledge about a large number of visually impaired students from Slovakia, who were educated there in the past, but in recent years Slovaks' interest in obtaining graduation has dropped significantly. The opinion of the director of the conservatory on the great decline in the interest of Slovak students in higher professional music education and on the positive and negative phenomena in the current music education of visually impaired individuals is as follows:

"*I have no idea why talented visually impaired ones from Slovakia do not apply to study. Probably because Bratislava offers the visually impaired*

a kind of music education, but I don't know anything closer. As you have noticed, we are an inclusive school where both visually impaired and intact students are taught side by side. In high school, inclusion is completely natural and this way can prepare individuals to study at university. There, the full independence of a visually impaired student is assumed. One of the big tasks of a school that educates future music teachers is to be so well prepared for their profession to withstand considerable competition with university or AMU (Academy of Music Art in Prague) graduates who also apply to music schools (formerly teachers with a university education were an exception, today commonly). But they need to be even better to match others. And that's very difficult! I see the satisfaction of some music teachers as a negative phenomenon in current music education with the fact that they teach a visually impaired pupil only by hearing and do not lead them to actively read a Braille notation, mainly because they do not know it or do not have enough necessary experience or knowledge. And also the fact that many are afraid to accept the visually impaired at all, because they would not know how to deal with it. On the contrary, the positive is that with the right leadership, admirable performances can be achieved, and some school graduates or AMU students are a living example of this."

There is no conservatory or a university focusing on music in Slovakia, which would be mainly aimed at music education of visually impaired individuals. Most visually impaired students in Slovakia attend music schools, where they are fully integrated. However, the competence of music teachers in Braille notation, which students have to acquire, as well as in specific methodical strategies within the playing of individual musical instruments, appears to be a problem.

RQ2: What methods and means do music teachers use in music education for visually impaired students?

Category 1: Use of Braille notation in music education of visually impaired students

Most of the participants stated that they teach visually impaired students on the basis of a Braille music notation, except for a teacher working at the Conservatory in Košice, who teaches her students exclusively by hearing. „*In the past, I taught two students in a way that I played a few beats to them and they repeated them by hearing, or I played them recordings at a slow rate even after individual voices. I received information how to teach visually impaired students from older teachers.*" Also participant no. 2 states that "*a visually impaired student has good hearing, which I played for her, so I could repeat it, I gave her some recordings, I played something for her and*

she repeated it after me. I checked her fingers to see if she had them placed correctly, and if she had them wrong, I corrected them. We did not solve the notes at all, she attended first class at primary school, she could neither read nor write, we solved it in such a playful way". Furthermore, the participants state that only a small percentage of music teachers in Slovakia who teach visually impaired students know Braille music notation, uses it in teaching such a student. However, especially graduates of the Jan Deyl Conservatory, or graduates of the Music School in Levoča, practice writing music notes in Braille in the teaching process. Participant No. 5 claims that the most effective method in the process of mastering a musical composition is a combined method, the use of Braille's notation together with the use of auditory perception and musical memory by playing excerpts of the work. According to the information we gathered from the participants, most music teachers in Slovakia teach their students only by hearing, which does not allow students to become autonomous professional musicians in the future.

Category 2: Use of modern music technology in music education of visually impaired students

Based on research data, only one participant uses modern music technology in the teaching process of the visually impaired, which helps her to orientate in music score and rhythmic notation, in auditory perception. Applications, software, programs make it easier for them not only to read notes in Braille or standard notation, but also to master them, compose, instrumentally arrange and record their own music compositions. Participant No. 2 stated that she uses modern music technology when composing. *"I use a sheet music program, MuseScore and I've tried almost everything I can. I also wrote a thesis at the conservatory, in which I analyzed technologies for the visually impaired, I wrote about various computer programs. I also use the connection of the piano with the computer, so I record my own sounds to the computer and thus create, otherwise it would not be so high quality. I work with recording and with the sound in general, I always try something new, but a lot of programs are not accessible, only a few, about 2 to 3 are accessible, which can be used for music or recording."*

RQ3: What is the most common employment for visually impaired individuals who are graduates of music schools / conservatories?

From the answers of the participants, we learn that visually impaired students who graduated from an music school or conservatory, or a university with a music department, according to the information obtained, are most often employed as music teachers at art schools. Some

graduates of the Jan Deyl Conservatory have worked professionally as piano tuners, composers, singers, etc. Some of them completed their studies at universities in the field of special education as well as in other fields of educational specialization.

Participant No. 4 music teacher, pianist and harpsichordist, working at the Conservatory at Timonova 2 in Košice states: *"In the past I taught two visually impaired students, they were two boys who came to the conservatory at the age of seventeen and studied piano in my class. They graduated after six year study. One of the students preferred classical music and jazz, he was an active member of the band EmSoft, which was also successful, they participated in shows. He was also an excellent improviser. After graduating, he also taught at music schools, played accompaniment, played in cafes and hotels, and currently works at the Jozef Adamovič Conservatory in Košice. The second student focused mainly on ethnic world music. Today, he continues to focus on ethnic music and foreign languages. Only one of the students worked in the field of music, but the other was not interested in a professional career in the music sphere."*

Conclusion

We recommend music educators to fully respect their special needs when educating visually impaired students. Teachers can acquire knowledge and skills about the specifics of music education for visually impaired students from teachers of institutions where visually impaired students are educated, from graduates of the Jan Deyl Conservatory, or graduates of Music School in Levoča, at courses organized by the Conservatory of Jan Deyl, in special education centers, in Typhlo Centres, from professional literature, etc. We recommend music educators to turn to the mentioned institutions and individuals, which lead to their innovative supervision in modulating more specifically determined goals.

Systematic work requires further education of music teachers in the form of continuous education in the field of special education. We also propose that special music education, music therapy as well as special didactics of music education be introduced as part of higher professional study at conservatories, in which future music teachers at music schools would gain basic knowledge about specific educational approaches as well as methodical approach in music education of individuals with a disability.

An important part of the educational process also appears to be regular counseling practice in cooperation with the family and the school in the form of email communication, interviews, counseling and consultation meetings.

Knowledge of Braille notation is very important for visually impaired students, it leads students to independence, which does not allow them to master the composition by hearing. We consider it important to share knowledge about the possibilities of acquiring knowledge about Braille notation and special means, which are necessary for the effective acquisition of knowledge for visually impaired students in the educational process.

We also recommend using modern music technology in music education, which offers visually impaired students the ability not only to rely on learning songs by hearing, but to fully write down and further disseminate their music. Modern music technology provides suitable strategies for faster and easier acquisition of musical works and thus contributes to the increased interest in music education.

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Specifics of cognitive processes in children with violations of written speech

Olga Shterts

Abstract. The article is devoted to the problem of the specifics of cognitive processes functioning in children with violations of written speech and reading. The paper covers and summarizes the researches of scientists regarding the causes and factors affecting the occurrence of violations of reading and writing, the specifics of the manifestation of violations of reading and writing in primary school age, the influence of violations of reading and writing on the development of cognitive processes in children with dyslexia and dysgraphia is indicated. The article provides a comparative analysis of the development of cognitive processes in children with normal development and in children with violations of writing and reading. The importance of correcting not only speech disorders in children with dysgraphia and dyslexia, but also higher mental functions is emphasized.

Keywords: cognitive processes, memory, attention, dyslexia, dysgraphia, mental stability of the personality

The problem of improving the quality of younger generation education remains one of the most actual problems in psychological and pedagogical science. Modern social-economic challenges to society require from a person to maximize his potential of knowledge, skills and abilities. However, as statistics shows, the number of children with certain disorders, including violations of written speech, is increasing. For society, it is becoming an important area of

work of socializing in society of children with limited abilities, using the compensatory psyche capabilities.

The increase of the number of children with violations of written speech in primary school determines the urgency of the problem of correctional work organizing with this category of children in an educational school. For effective correctional work the question of concomitant disorders in children with dysgraphia, in particular in cognitive processes development, becomes important and significant.

Revealing the specifics of cognitive processes functioning in children with dysgraphia and dyslexia will allow to determine the influence of cognitive processes on the effectiveness of children's activities in the learning process and to construct corrective activities more competently and effectively.

The problem of dysgraphia and dyslexia firstly attracted the attention of specialists in the 20th century. This problem was developed in the works of such famous scientists as G.M. Sumchenko, L.G. Milostivenko, R.I. Lalaeva, I.V. Prishchepova L.G., Paramonova, A.N. Kornev, and later in the works of O.I. Azova, O. V. Eletskaya [10, 8, 1, 3].

Within the framework of Russian speech therapy science, it is accepted to separate dyslexia and dysgraphia; in foreign speech therapy, violations of written speech are not distinguished separately, they are considered together with violations of reading and are designated by the same term - dyslexia.

It should be noted that the symptomatology of violations of written speech is characterized by the presence of specific errors, that is, errors that are not associated with the use of spelling rules, are persistent and are not caused either by the child's intellectual or sensory development disorders, or by the nature of his schooling.

Violations of reading and writing can be associated with a delay in the formation of certain functional systems important for the learning of written speech, due to unfavorable factors acted at different periods of the child's development.

In addition, dyslexia and dysgraphia occur in organic speech disorders (A.R. Luriya, M.E. Khvatsev) [12, 9]. Some researchers note a hereditary predisposition to dyslexia (B. Halgren, M. Rudinesco) [5], when the qualitative immaturity of certain brain structures involved in the organization of written speech is transmitted.

Dysgraphia and dyslexia, according to M. Sule, F. Kosher, may be associated with a disorder that occurs in a significant area of praxis and

gnosis, which contribute to the perception of space and time. Therefore, one of the important factors contributing to occurrence of the dyslexia and dysgraphia is the difficulty in finding the starting point in space and time, as well as in the analysis and reproduction of the exact spatial and temporal sequence.

Temple, Elise and Poldrack Russell A. in the course of their researches came to the conclusion that with violations of written speech and reading (dyslexia), disorders in the neural bases of both phonological and spelling processes important for reading can be observed [17].

Lucianne Fragel-Madeira, Juliana S. C. de Castro1, Cristina M. C. Waisenhowerk V. Melo in a joint research came to the conclusion that dyslexia is associated with disorders of neuronal processes functioning [14]. Therefore, it is very important to recognize on time and carry out timely correction of violations of reading and writing in children.

Based on the data of neuropsychological research by T.G. Wiesel and E.D. Dmitrova, it should be noted that children with dysgraphia and dyslexia have an unfavorable anamnesis of an organic nature, in particular [20]:

- residual phenomena of organic brain damage;
- incomplete lateralization of speech processes;
-specific disorders indicating the involvement of certain zones of the left hemisphere in the pathological process (this disorder is characterized by the emergence of problems associated with the selection of spatial and geometric features in the subject, the emergence of difficulties in the analysis of images of visual objects and also highlighting their features, understanding of the meaning of words and their meanings disorder [20]).

In Russian speech therapy science, the concept of R.E. Levina is spread, who interprets violations of reading and writing as a manifestation of systemic speech disorders, and also as a very vivid reflection of the consequences of the oral speech underdevelopment in all its links [11].

The famous scientist A.N. Kornev believes that the deficit of voluntary concentration, switching and distribution of attention, the successive auditory-speech memory disorder are played one of the most important roles in the occurrence of spelling errors [8].

But not only according to the results of the works of the before mentioned researchers, it can be concluded that a disorder of spelling norms learning may be due to the lack of formation of the main components of literacy, including:

- developed speech;
- sense of language;
- the ability to perform operations with language units.

In foreign and domestic science, the question of the relationship between speech and such a cognitive process as thinking in the structure of a speech defect is also being actively studied. Researchers in their theoretical positions were divided into three groups. The first group (A. Kussmaul, 1879; P. Mari, 1906; M.V. Bogdanov-Berezovsky, 1909) [13] put speech disorders in direct dependence on the defects of the intellectual sphere, believing that it is mental underdevelopment that determines the disorder in the development of speech. The second group (K. Goldstein, 1927, 1960; H. Head, 1963) [4] believed that the introduction of causal relationships between disorders of speech and thinking was wrong, as in both cases the main reason is a disorder of brain integrative activity. The third group (A. Peak, 1931; F. Lotmar, 1919; G. Ya. Troshin, 1917, 1927) believed that thinking disorders are directly caused by speech defects. Herewith, they were united by the fact that all researches were descriptive [15].

Influenced by the ideas of L.S. Vygotsky in the 1930s in psychology and defectology, the theoretical ideas about the origin and structure of the person higher mental functions were radically changed [18]. It is experimentally proved that speech plays a leading role in the development of mental processes. Later, this became the push for a new wave of research aimed at studying the specifics of mental processes (perception, memory, thinking, etc.) in children with normal speech and speech disorder. Among them, the leading place is occupied by the scientific concept of R.E. Levina. In the 40s of the XX century, the activities of R.E. Levina was aimed at developing the principle of a differentiated approach in teaching children with speech disorders [11].

Thus, dysgraphia is polymorphic in its structure, which results in the lack of development in children not only of speech, but also of nonspeech higher mental functions. These include:
- attention;
- speech and auditory memory;
- verbal-logical thinking [11].

The results of our study complement the scientific concepts of modern personality psychology, special psychology about the specifics of cognitive processes functioning in children with violations of written speech and reading. They also expand the theoretical and empirical

base of pedagogical and psychological sciences by developing the problem of complex correction of reading and writing disorders in children.

The empirical diagnostics of cognitive processes involved 223 pupils of grades 2-4 of secondary schools in Yelabuga with writing and reading impairments. To conduct a comparative analysis and identify the specifics of the development of cognitive processes in children with dysgraphia and dyslexia, students in grades 2-4 (230 students) with a developmental norm took part in our study as a control sample. As an empirical toolkit, we used the following diagnostic techniques: Bourdon's proof sample, memorizing 10 words according to A.R. Luria [12], Schulte tables [2], "Memorizing 10 pictures" method, Y. Gilbukh's phonemic hearing test [19]. Also, as a diagnostic tool, a package of techniques developed by I.N. Sadovnikova to identify signs of reading and writing disorders in children of primary school age was used [16]. To identify differences in the results of the study between the control sample and the experimental sample, we used the Student's t-test.

It should be noted that speech also belongs to cognitive processes. With the help of speech, a person tries to cognize the world around him rationally and, as we said earlier, speech is closely related to thinking. Therefore, we consider it necessary and important to characterize the specifics of the development of writing and reading in order to create a comprehensive understanding of the specifics of the development of cognitive processes in children with dyslexia and dysgraphia.

Cognitive processes during reading consist in recognizing a letter, remembering a word and its meaning as well as the ability to correlate the text read with knowledge and skills previously acquired. If we consider the mental processes that are activated during writing, then in this case, the ability to establish connections between the heard and the spoken word is very important, that is, the level of phonemic hearing development. But when we write, we not only hear the word, but also see it and write it down. Writing is a complex process that is formed only by the age of 7 years of a child and activates such analyzers as speech-motor, visual, speech-auditory, motor and visual. Writing literacy depends on the coordinated work of these analyzers.

The study of the level of cognitive processes development in children with impaired writing and reading is very important, as it makes it possible to identify the specifics of the impairment in this category of children, develop effective strategies and methods for correcting dysgraphia and dyslexia in children of primary school age and use these methods in the future.

According to the results of an empirical study, 73% of children from the experimental sample had mixed dysgraphia and symptoms of dyslexia, 11% of the examined children had symptoms of acoustic dysgraphia and symptoms of phonemic dyslexia, 8% had dysgraphia against the background of impaired language analysis and synthesis, and 8% had agrammatic dysgraphia and dyslexia.

Inshakova O.B. in his works he also focuses our attention on the fact that isolated forms of dysgraphia are not most often encountered in primary school age [6]. The leading form of dysgraphia is accompanied by the presence of specific errors characteristic of other types of dysgraphia. Consequently, as our studies have shown, the mixed form of dysgraphia is the dominant form of dysgraphia in primary school age [7].

When reading, the majority of subjects with symptoms of dyslexia encountered disorders associated with distortion of the sound-letter composition and the syllable-rhythmic structure of the word, letter-by-letter reading, that is, the children had difficulties in sound-syllable synthesis of the word, as well as unreasonable guesses. When children tried to think out the content of the whole word by the first letters of the word, and not read it. Difficulties in reading associated with the global holistic perception of the word were less common.

If we consider the content of specific writing errors, then the most common errors in the examined children from the experimental sample were those associated with the phonemic perception of the word, in particular, the mixing of voiced and voiceless paired consonants, hissing and sibilant consonants. Also, such mistakes as omission of letters and words, insertion of extra letters, non-observance of the boundaries of the sentence, writing prefixes separately, and prepositions together with the word were quite common.

The study of phonemic perception showed that in the experimental sample in 48% of the examined children the level of phonemic hearing (perception) was developed at a high level, in 46% of the surveyed children the level of phonemic hearing was at an average level, 2% of the surveyed children had a low level of development of phonemic hearing. Diagnostics of phonemic perception in the control sample (children with a norm of age development) showed that 89% of children had a high level of phonemic hearing development, 11% of children had an average level of phonemic hearing. There were no children with a low level of phonemic hearing development in the control sample. Phonemic

hearing directly affects the sound-letter analysis of a word. Accordingly, children with a developmental norm when writing distinguish well between the sound of voiced and voiceless consonants, hissing and sibilant consonants. Violation of the sound-letter analysis of a word leads to the fact that in children with a violation of written speech there are errors associated with the displacement of letters by acoustic-articulatory similarity.

In the course of the study of cognitive processes (attention and memory) it was revealed that in children with impaired writing and reading attention processes are most affected.
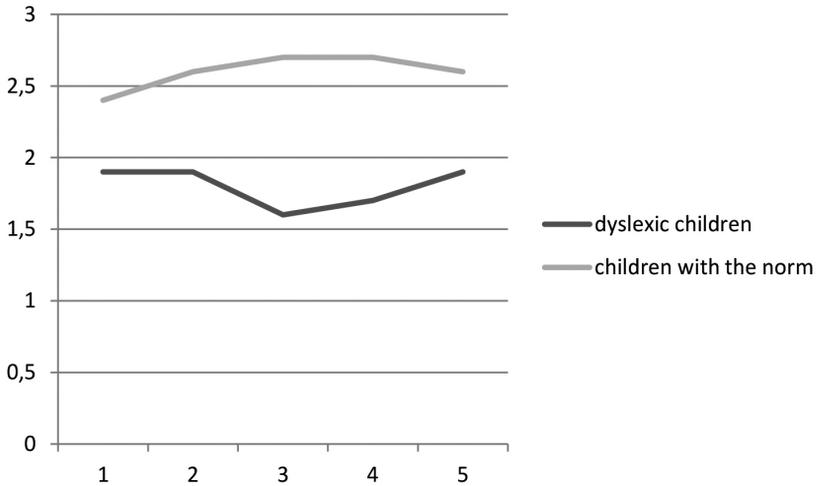
Fig. 1. The pace of activity according to the Bourdon's proof sample

Children with dyslexia and dysgraphia find it difficult to get involved in work. The pace of work is unstable and at the end of the work, as the results of our research show, the pace of work is very slow. You can see visually data on the pace of activity of children with reading and writing disorders and developmental norms in Figure 1. Therefore, they get tired and overworked very quickly. In 63% of children with dyslexia and dysgraphia, attention span is at a below average developmental level, and 37% of children have an average attention development level. At the same time, it should be noted that in 84% of children with writing and reading impairments, the accuracy of tasks is at a high level and only

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in 19% at an average level. As for the control sample of our study, 34% of children have developed attentional stability at a high level, 39% of children have above average attentional stability, and 27% of children have an average attentional stability level. 90% of children with developmental norms have a high level of task accuracy, and 10% of children have an average level of task accuracy. As we can see from the results of the study, the accuracy of task performance in children with dyslexia and dysgraphia does not differ from children with normal development. Statistical analysis showed that the differences in the accuracy of the tasks are not significant (t = 1.67)

Our results help us to conclude that if children with writing and reading impairments are given a little more time to complete tasks, this can help to reduce the number of mistakes the child makes when writing and reading and, as a result, improve the quality of the task.
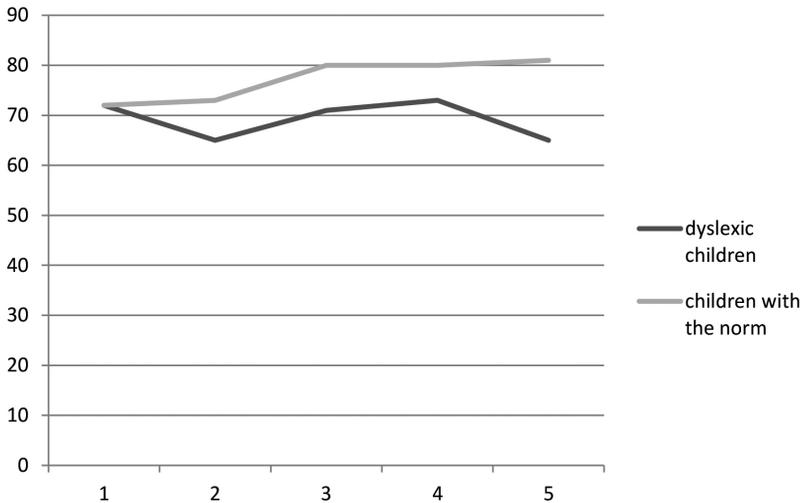
Fig. 2. Efficiency of work according to the "Schulte table" method

In the process of studying attention according to the Schulte method, a high level of instability of work efficiency was revealed. These indicators are clearly shown in Figure 2.

Thus, children with a written language disorder begin to work effectively and actively, but then there is a sharp decline, followed by a grad-

ual rise in work. But at the end of the activity, the effectiveness of the work definitely drops. This instability in work leads to a decrease in the achieved results. Therefore, to consolidate the learning and success of a child with writing and reading impairments, it is necessary to repeat the previously studied material many times. If we consider the dynamics of work efficiency, then, on average, children with developmental norms do not observe sharp jumps in work efficiency indicators. Children with a developmental norm learn the material under study faster.

Also, according to the Schulte method, 26% of students had a low level of mental stability, 55% of children had an average level of mental stability, and 18% had a high level of mental stability. When diagnosing children from the control sample of the study, we obtained the following results: 7% - a low level of mental stability, 45% - children with an average level of mental stability and 48% of children with a high level of mental stability. Accordingly, a significant part of the children we examined with writing and reading disorders, depending on the situation (for example, it is not emotionally significant), can demonstrate confidence in their actions and firmness in achieving the goal. In other situations, especially if these situations are emotionally significant, for example, completing writing or reading assignments that the child previously failed, demonstrate uncertainty in their own actions and do not show firmness in achieving the goal. Children with developmental norms in most cases show a high level of mental stability, can cope with difficult tasks without loss of work efficiency. Consequently, children with impaired writing and reading demonstrate anxiety, lack of confidence in their own actions and a low level of self-esteem more often than children with developmental norms, low level of mental stability and susceptibility to the influence of their own emotions. Children with writing disabilities can find it very difficult to control their own emotions, especially when they fail. And this contributes to a decrease in the effectiveness of the work of children with impaired writing and reading. Statistical analysis showed that the differences in the level of mental stability in the control and experimental sample are significant, $t = 2.74$ at $p \leq 0.01$.

Therefore, in order to increase the mental stability of children with dysgraphia and dyslexia, it is necessary to work on the self-esteem of children, to create situations of success for children with impaired written speech at the lesson, so that they have the opportunity to believe in their own strength.

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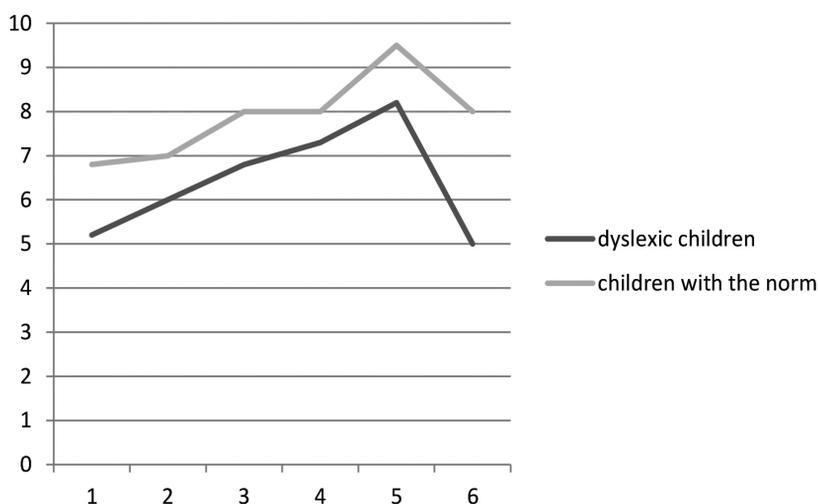
Fig. 3. Auditory-verbal memory (according to the method of AR Luria). Memorization curve.

Memory study by the method of A.R. Luria made it possible to conclude that children with dyslexia and dysgraphia have difficulty memorizing information by ear, but after a certain period of time, they very quickly forget previously memorized information by ear. Visually, the dynamics of memorizing words in children with impaired writing and reading (dyslexia) and in children with normal development can be seen in Figure 3. 8% of students with reading and writing impairments have a low level of sound memory, 73% of children with dysgraphia and dyslexia have an average level of development, and 19% of students with writing impairments have a high level of development of hearing and speech memory. In children from the control sample of the study (children with normal development), 37% have a high level of development of auditory-speech memory, 63% of children have an average level of memory development. As for the low level of development of auditory-verbal memory, in the course of the study it was not revealed in children with normal development. Statistical analysis of the results of empirical diagnostics showed that differences in the level of development of auditory-speech memory are statistically significant ($t = 2.81$ at $p \leq 0.01$)

Consequently, children with developmental norms memorize quite well the information they have memorized by ear, and long-term auditory-speech memory is more stable and productive, in contrast to children with reading and writing disorders. Visual memory in children with writing impairment is more preserved. 91% have a high level, 9% of students demonstrate an average level of development of visual memory. In children with normal development, 95% have a high level of development of visual memory, 5% of children with an average level of development of visual memory. Therefore, we can conclude that in order to increase the efficiency of mastering educational material for children with speech and reading impairments, it is necessary to consolidate the topic under study through stimulation of visual images.

Thus, in order to increase the efficiency of the activity of children with impaired writing and reading, it is necessary to correct speech therapy disorders associated with defects in sound pronunciation, as well as the development of such cognitive processes as attention and memory. It is also necessary to carry out corrective work to increase the speed of the pace of activity and mental stability of children with dysgraphia and dyslexia in order to increase the effectiveness of activities in achieving educational goals.

Conclusions.

1) In children with impaired writing and reading, a decrease in the level of development of phonemic hearing is observed, which significantly affects the sound-letter analysis of the composition of the word and the commission of errors associated with mixing by the acoustic-articulatory similarity of letters.

2) Children with dyslexia and digraphia are characterized by a low level of performance, high fatigue, a reduced level of development of concentration, difficulties in perceiving and assimilating information when activating the auditory analyzer.

3) Children with impaired written language are characterized by emotional lability, which is expressed in uncertainty about their own actions, mood swings, and difficulties in restraining their own emotions. Mental instability of the personality affects the decrease in concentration of attention and the efficiency of activity.

4) Correction of reading and writing disorders should be carried out on the basis of an integrated approach and include not only the correction of specific mistakes made by the child in reading and writing, but work on the development of cognitive processes, mental stability of the individual (for example, self-regulation skills).

5) Carrying out corrective work of such cognitive processes as attention and memory will also help to reduce the number of specific mistakes made when writing related to omissions and insertions of letters and words when reading and writing in children with dyslexia and dysgraphia.

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The needs of a family of a child with terminal disease

Abstract. The aim of the paper is to identify, describe and qualitatively analyse the needs of families with a child with lethal disease. The authors of the article focused on identifying the needs of a family with a child with a lethal disease. They realised qualitative research carried out through interviews with people from helping professions who work with families with a child with lethal disease.

Keywords: lethal disease, family, family needs, special pedagogy.

A child's lethal disease is one of the most challenging periods in a family's life. The family must adapt to the new tasks that the disease brings with it, and everything adapts to the child's needs. However, we are often unaware, and sometimes even the family itself, that the needs of other members must be met. Need is a state of scarcity or excess, which deviates a person from his optimal state. Maslow [4] argues that needs are arranged according to mutual dominance. For a person, the most important needs are at the bottom of the hierarchy, and these are the physiological needs by which a person achieves physical homeostasis. If these needs are not met in a person, the others lose importance, although they may not be met. Other needs include the need for safety, which is as important as physiological needs and is particularly visible in young children, who respond to even the slightest signs of danger, such as parental quarrels. Not only children but also adults need a safe, predictable, and organized world. Third in the hierarchy, the author (Ibi-

dem) mentions the need for love. We understand it by the need for love as such, affection, belonging, and the need to form loving relationships. These are the social needs of the individual. The author does not include in this need a sexual need, which according to him is exclusively a physiological need. Another need is the need for respect. It is a need where a person wants his person to be highly valued, and the basis of this need is his own self-esteem. This need has two dimensions: the desire for strength, for achievement, adequacy, independence and freedom, and the desire for reputation, prestige, recognition, and attention. The last and highest need is the need for self-updating. For human, this need means to become who he wants to be. However, the author (Ibidem) notes that this need will not be achieved by every person in a lifetime. Like Maslow [4], the WHO (cited in Marmot et al., [3]) includes biological needs that are prioritized to be met. Other needs include psychological, social, spiritual, and environmental needs. We also add to this division psychosocial needs, which deal with the psyche of the individual and society, ie especially relationships and their maintenance, because in our conditions the term social refers to the relationship to society, but not to the dimension of relationships, but especially to society as a system.

Research

The aim of our research was to identify the needs of families with a child with lethal disease and to find out whether the needs of the family differ and change in the various stages of the disease described by Kübler-Ross [2]. We chose qualitative research conducted through interviews with workers in helping professions who are in contact with families with a lethal child, and through them we tried to gain a deeper understanding of how they perceive the needs of these families within their profession. Our original intention was to select for research directly families that have a child with lethal disease or families that are already lost. However, after a thorough evaluation, due to the high emotional sensitivity of the topic, we evaluated that families are not interested in participating in research and talking about these painful and still current topics, which was confirmed to us when we addressed 5 families, stating that they were explained how the research was going and no response was received.

For this reason, we decided to involve participants in the research who work with families with a lethal child and participate in meeting their needs. The participants were selected by intentional selection,

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which is carried out according to Gavora [1] based on certain relevant features, therefore we set the following conditions for the selection of participants:

- work in the helping profession in palliative care,
- experience with families with a lethal child,
- length of practice in the department min. 1 year.

The research was attended by employees of children's haematology and oncology departments, children's mobile hospice or both, in the case of a priest it was an experience with families of children with lethal disease within his spiritual service.

7 people, 4 women and 3 men were involved in the research. The length of practice in each department ranged from 1.5 years to 43 years, while a priest with 43 years of experience does not work intensively in the department, but it is one of the components of his spiritual service in various places of work.

We used the method of semi-structured interview to obtain data precisely because of its flexibility of adaptability to the participant's statement, which in several cases enabled the acquisition of a larger amount of information. The interview was recorded on a dictaphone, which was then converted into written form. The main questions were compiled based on a study of the literature. As a template for the questions, we used the stages described by Kübler-Ross [2]:

1. stage of shock,
2. stage of denial and negation,
3. stage of anger, feeling of injustice and guilt,
4. stage of depression and sadness,
5. stage of reconciliation and acceptance.

We set 3 areas to which the questions asked by the participants were adapted:

1. Work and experience of the participants within his profession.
2. The greatest perceived need of the family.
3. The needs of the family in the various stages of the child's illness

In the following part, we decided to approach the third, from our point of view, the substantial area, which is the greatest perceived need of the family.

The greatest perceived need of the family

With this question, we wanted to find out whether some needs will be the same despite the variety of professions and services that the family

needs. We have classified the needs into the categories of needs listed by the WHO (cited in Marmot et al., [3]): biological needs, psychological, social, spiritual, and environmental needs. To these needs, we have added, as mentioned above, the category of psychosocial needs.

Doctor

"Well, the family's greatest need is for them to feel like they are doing their best for the child, that they are really involved in the child's whole management and what they're doing, that they can't do more than what they're doing. So, they really feel like I am really doing my best and we do not forget about some important things, we did not miss something, it's really so important for them. Another important thing is that there be a relationship of such trust between doctors and parents, because as soon as the parents begin to doubt or somehow disparage the doctor's decision, then the relationship is so broken and then the relationship is broken by some of the child's management. So, this is very important. And then probably the child's approach to the treatment, about what relationships we establish with the child, because if the child does not cooperate, or has negative attitudes to the doctor, such is his psyche and such his approach to the treatment greatly affects the functioning, so I think that's also very important. "

The participant perceives as the greatest need of the family the need to do everything in her power for the child. We can classify this need into the category of psychological needs. As a need that she perceives as a doctor's relationship with the family, but not directly a need of the family itself, is the need for trust in the doctor and the child's approach and relationship with the doctor.

Nurse

"But the biggest need for them is that they're scared when they go home, huh?" And they need such a sense of security, and we can give it to them when we give them the telephone contacts for us, that they know that they can contact us at any time, and we can travel to them at any time. And this is for them, they always evaluate it so retrospectively that this was a wonderful help, that they knew they had someone to turn to. Then, from the spiritual point of view, if they are believers, they usually have their priests in the place of residence, the clergy to whom they can turn. And then they, the priests, go home to them directly, either giving the last anointing or supporting the family with a conversation or something like that about the

end of life. But not everyone, those priests are so set for this, but most are."

The participant considers the need to have available contact with the hospice care team to be the greatest need of a family with a lethal child. We can classify this need among the need for safety and security, which is also mentioned by Maslow (1943), and we can classify it into the category of psychological needs.

The participant also states that if the family is a believer, there is a need for the presence of a priest, which we could classify as spiritual needs.

Psychologist

"Uhm. There is probably such, I have already mentioned, such a need for such security and safety. As one of those needs is that so that our child, whether they, or the staff who take care of him, can be able to ensure that they suffer as little as possible, that they don't have pain, that they just … probably most, most perceives to have as such a quality of life, in quotation marks in the sense that if the child is connected to some devices, it may be as comfortable as possible for that child. It is just such a need that he knows we can take care of us and if we do not know, there is someone who can take care of and deal with any health complications that may be. So, I perceive it as one of the biggest, or one of the biggest needs. To give the child such care as possible, and parents are as afraid of it as possible. "

"… to do as much as possible, well … and after another such need, it may be forgotten, but there is some way to involve siblings, or a wider family, that many times even those siblings might need to explain something, talk , to ask, to be involved in the process and sometimes they are not, sometimes they are, but it is also such a need that the child is in our department, that the child is not in the lethal stage, but when it is simply with us that somehow communicate that you have a sick sibling by that healthy sibling, that this is often a problem for those children we know from the beginning, that there is a prospect that they will be cured. Although I know that the child will be cured, but how … I have now encountered a case where, as those parents, as if they did not want a sibling to come there to that dying sibling, no, we do not want, we want you remembered him so and so. That, as if, um, such a need to allow all those members to say goodbye to that dying child."

"I think what such needs are, but I probably perceive such a need, such a need, that we know we have safety, a safe place here in the hospital, when something gets complicated, we can come here and they will help us here, that's probably such the strongest, with the fact that I work in a hospital, so probably the siblings and then maybe some such, I don't know, maybe such a need for someone to be around, that's kind of psychosocial help or psychological help. "

The participant perceives as the greatest need of the family the need of the family so that their child does not suffer and the need to provide the best possible care for the child. Both needs can be classified into the need for safety and security and those in the category of psychological needs. The need that the participant perceive as the greatest need in relation to the family is the need for siblings and the extended family to be involved in the context of the child's illness.

Special pedagogue

"What do you need? This is also what you need most to think about. It depends on the family, because sometimes the family needs the loved ones to help them stand, to understand, even the distant family, who may not be able to do it that much. And sometimes this is very good, they can really do it, but again they need, I do not know, maybe they need such support sometimes, some really need that financial support, it's dependent. They are dependent, they fight with such things that they have no money, even though they are trying to improve it now, but also Plamienok is trying to help, but as much as he needs, I think that … such a closeness of people who are here and they know they are here, that we can call them, and they will try to help us as they know. Because every family is completely different. I do not know a single family that would experience it anyway. Since I met the families of the children I met, they were each different. Every. So, the person needs to look there. But what they need is the feeling that what we need is security for the child that their child is taken care of. To see that care for the child so that he suffers as little as possible and has the greatest possible comfort. This is what they need. That their child, who is ill, is interested in him, in his needs, in that even the time that is before he dies, to be taken care of as best he can. Because the family will give the most that it knows, but as for the health and comfort that the child needs, it cannot do so much. That often other children also need and need to take care of them. So, like all this, he needs help with the whole process. So, the team of people

who works there is very important there, whether they are doctors, nurses, I do not know, social nurse and teachers, hey, because often even those relationships that concern our classmates will go away very much … "

The answer of the participant shows that she does not strictly perceive one need as the greatest need of the family but mentions up to five needs that she thinks are very important for the family. First, and we can assume that the most important need, the participants state the need for support and understanding from close people. We can include this need in the needs of psychosocial. We can also include in this category the need, which the participants state below, psychological closeness or the presence of another person, which we called as the need for psychosocial support. Financial and material needs are one of the needs that families perceive as insufficient. We can place this need in social needs. We can include in the category of psychological needs the stated need that the child does not suffer and the need to provide the best possible care for the child. However, the participant state in several places of the statement that each family is individual and each experience it differently, so it is very difficult to generalize.

Medical pedagogue

"The need is to have a team of people with you who can turn to him at any time, who will be able to answer his questions and will simply be able to help him in taking care of the child, what else he can do for him and how he can actually help him. "

From the answer of the participant, we can deduce up to two needs, namely the need for accessible contact with the hospice care team and the need that follows it, the need to ensure the best possible care for the child. These two needs, which are closely linked, are safety and security needs that fall within the realm of psychological needs.

Social worker

"I can think of several things that I would call such main things, and that is to be sure that they are not alone in this situation. That when they start something they cannot handle, they pick up the phone, call and someone comes and helps them. I just think it is alpha and omega. Everyone is afraid of the moment, and everyone is afraid that it will not happen dramatically, that it will not be suffocating, that it will not be some cramps and so on. They thought that most of our patients were in oncology, in the ward, treated, so they know what a dramatic situation looks like, and the idea that they should

be left alone without help is, in my opinion, the most frightening of them. It is necessary to be sure that they will not be alone in this situation, that someone will always accompany them, I think it is. And, of course, when it comes to the child, so that it does not have pain, so that it does not suffer. That is where the symptom is nothing out of the ordinary. Pain just destroys everything. You can live without pain and still have some quality of life. It is not possible with pain. So, I think pain regulation and these things. The other needs that arise are just as important, but from my point of view I see this. And when I say this on such a psychosocial level, to constantly feel that someone is listening to them, understanding them and accepting them as they are. That is the basis of every conversation - just believing that what they did is good and right. Basically, it's from every sphere that's the biggest thing. One is from the psychological, one is from the medical, one is from such a social sphere, to have such a feeling of security and to feel that someone will support us in it, or someone will come and help us cope with the situation."

The participant considers the greatest need of the family to be the need for accessible contact with the palliative care team, which is a psychological need, as it is a subset of safety and security needs. In the category of psychological needs, we can also include the stated need of the family so that the child does not suffer. The participant, as another need, he mentions in the question of the greatest perceived need, mentions the family's need to be heard, which is a psychosocial need, as it is a psychological desire of a person to share his problems with another person.

The priest

"So, in the early stages of the disease, every family believes that they will get out of the disease. So, they pray intensely, they lead it into communion, into that unity of prayer, that is, therefore, your prayer, your presence among them, that the pastor, that the priest prayed with us. In retrospect when we had the girl who died here at the age of 15. She was still here on the sacrament of confirmation, she still managed to do it, she was still enjoying it, but the disease had been dragging on for two years soon. Well, there the family, but that is something extraordinary, they were going day-to-day to the Lourdes Cave, the family to pray, they even met there with bishop, he was with them too. They prayed and begged for the girl's healing, and it hosted her state of health in various ways. They also invited me to their home, to pray with her, when they already had her at home,

with her. Well, so, that family judged it that way, now I am jumping a little from your basic question, but this way, the presence of a priest meant a lot to them in support of that prayer, but even after things were clear that it was going. in conclusion, they perceived the prayer and the priest's participation in it very powerfully and were able to reflect on the path of this great suffering themselves. Not only did they accept that it was probably God's will, and so we appreciated it with them, that the Lord God never takes man to catch him as a thief in pears, that he takes man when he reaches … his personal holiness culminates, to some he adds time to the 90's, to another he soon … Even her life, that she probably reached the maximum. She was very inwardly open to God even in her time of suffering, and she never grumbled to the girl, and she was still looking forward to catching up with the Burmese. Even a few months before her death, hoping for a miracle, her cousin drove her to Lourdes, up and down. It did not happen, but they also perceived the way again that they were not empty. They were so strengthened in the belief that her, and she … accepted that time of suffering as preparation for departure or transition to eternity, so that there is no violence against me, no one robs me like a thief, it is my way and the whole family has moved, so it is appreciated that its death has moved all of them closer to God. So, they evaluated the death."

From the answer of the participant, we can deduce two basic needs, which from his point of view the family considers to be the greatest and that is the need for prayer and the need for the presence of a priest. In this sense, the need for prayer is perceived as the need for people or a priest to pray to God for a child, which in this case can be considered a spiritual form of need to do everything in the child's power. Both needs fall into the category of spiritual needs.

From the above statements of the participants, we can see that the most frequently mentioned needs of the family are the needs, which do not concern the parents or siblings themselves, but the needs that are associated with a sick child and caring for him. These needs are, for example, the need for the child not to suffer and to be very closely connected with it, but directly to the need to provide the best possible care for the child. The statements also showed the need for affordable contact with the hospice care team. To these needs concerning the child we can also include the need of the family to do what is possible for the child. These needs relate to ensuring the best possible quality of life

for the child, and this need is present throughout the child's illness. We can say that this need is especially important for parents who are trying to maintain a child's quality of life, but as we said in the chapter on siblings, siblings also need to be drawn into the context of childcare, although we can consider here whether it is about caring for a child, or a form of gaining parental attention. The common denominator of these listed needs is the category of psychological needs, and most of these needs are based on the psychological need for safety and security and the need to care for the other person. Another category of needs that appeared in the participants 'statements are psychosocial needs, in which the participants statements did not agree on one specific need, although these were very similar needs as the need for support and understanding from loved ones or the need for psychosocial support. All these needs are about sharing their problems with other people, giving the family the feeling that they are not alone in the situation and although it is not a psychological need, we could argue that it is a psychosocial transformation of the need for safety and security. She also discovered in the testimonies the spiritual need for the presence of a priest. In both cases, it was the need of believing families, from which we could conclude that this need occurs mainly in religiously based families. As another spiritual need, there was also the need for prayer in the sense of praying other people for the child and the family, and here we can say that it is also about ensuring the best quality of life for the child, only in the spiritual dimension. From the category of social needs, only one need was mentioned, namely the financial-material need, in which it was mentioned that each family is different and can be individual, but in general it is perceived as a need that several participants mention as insufficient for families in later statements. Families must deal with a financial shortage in some cases, as social support systems in this area may be insufficient for the family, especially in terms of income and expenditure. The needs do not differ significantly according to individual professions and include similar needs, except for the statement of a priest who sees spiritual needs as the greatest needs of the family. This may be because in the vocation of the clergyman he tries to meet these needs in families and does not have daily contact with the family, as in other professions. Participants who work in a mobile hospice and meet families in home care perceive the need for affordable contact with the team as the greatest need. This need was also outlined by a psychologist, although in his statement we conceived this need as the need to pro-

vide the best possible care for the child, as families in the haematology and oncology department have 24-hour contact with the palliative care team. From this we can conclude that families with a lethal child who are in the care of a mobile hospice have different needs than families that remain in the ward. Both types of families need the child not to suffer and be provided with the best possible health care, but families in a mobile hospice, who probably also needed to be with the child at home, may fear that the hospice team will not be able to come, or they may be afraid that, although they have been trained in various situations, they will not be able to care at a critical moment, and it is from this fear that the need to have available contact with the hospice care team arises, because it is a matter of providing care for the child. From the above statements, we can conclude that the most important need for the family is to ensure the best possible care for the child or the need that the child does not suffer. We can name these needs as the need to ensure the best possible quality of life for the child. It is interesting that although it is a question of the needs of the family, or in this case especially of the parents, this need is related to the sick child, and it is not a purely need those parents would have. This means that the family is a much more complex system than just the coexistence of family members, between whom there are certain relationships, whether biological or social, but the members are closely linked to each other and, if necessary, mobilize family members care and subordinate their interests to the interests of the child to the extent that the child is subject to their personal needs. The second biggest perceived need was a need for psychosocial support. This need offers the family a kind of social security and at the same time allows them to vent their emotions, while family members know that they will be regulated and directed in some way.

Professional	The greatest perceived need of the family	Categories of needs
Doctor	The need for the child not to suffer	Psychological needs
Nurse	The need to provide the best possible care for the child	Psychological needs
	The need for support and understanding from loved ones	Spiritual needs
Psychologist	The need for the child not to suffer	Psychological needs
	The need to provide the best possible care for the child	Psychological needs

	The need for support and understanding from loved ones	Psychosocial needs
Special pedagogue	The need of psychosocial support	Psychosocial needs
	The need for the child not to suffer	Psychological needs
	The need to provide the best possible care for the child	Psychological needs
Medical pedagogue	The need to provide the best possible care for the child The need for affordable contact with the palliative care team	Psychological needs
	The need for affordable contact with the palliative care team	Psychological needs
Social worker	The need for the child not to suffer	Psychological needs
	Need to be heard	Psychological needs
Priest	The need for the presence of a priest	Spiritual needs
	The need for pray	Spiritual needs

Tab. 1 Overview of the greatest perceived need by profession [5]

Conclusion

The needs of families change in the various stages of reconciliation with death and in the stages of the child's illness, and each stage is characterized by different needs that prevail in the family at that time. Each family is individual and experiences the child's illness differently, so it is necessary to consider the individuality of the family when working with the family.

In the area of professions that work with the family, we would like to recommend, above all, the provision of quality supervision, which should be primarily a matter for the facilities in which employees work.

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The concept of sexual education of individuals with mental disabilities

Abstract. The article deals with the issue of sexuality and sex education of individuals with mental disabilities in the context of institutional care and inclusive strategies. It offers one of the ways to implement sexual education for individuals with such disabilities in the simplest and most natural way.

Keywords: mental disabilities, sexuality, sex education.

Introduction

Recently, the right of individuals with mental disabilities to a partner and sexual life has been increasingly discussed. This issue includes the opinions of individual experts, such as doctors (gynecologist, sexologist, urologist, psychiatrist, etc.), special educators, social therapists, but also parents, loved ones and, last but not least, the person with a mental disability. The public is contradictory to the sexuality of individuals with mental disabilities. Some are fundamentally opposed, as it is generally believed that these individuals are asexual and therefore incapable of sexual activity. On the other hand, there are more and more voices emphasizing and supporting the right of the mentally handicapped to sex life.

So if we are talking about the equality of people with mental disabilities, we must also take this important aspect of their lives into account.

Sex education of individuals with mental disabilities

Sex education of the mentally handicapped is an important part of preparing these individuals for an active sex life without physical or psychological risks.

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As stated by Šustrová (2008), sexual hygiene and sexual life are issues that society has avoided in the past as a sensitive issue, even though it is part of a full life. Sexual hygiene and sexual education for people with special needs should be essentially the same as for people without this disability, only it needs to be adapted to their understanding and degree of disability.

In general, there are four basic issues that sex education should address:

1. What exactly is sexuality.

2. How to deal with it.

3. Which methods are appropriate and which are inappropriate.

4. How to deal with dangers in this area.

(Brožová, cited according to Švarcova, 2011)

According to Popper (2002), the sexual education of people with mental disabilities should be focused on four groups:

Group 1 - future trainers and teachers of sexual education of individuals with mental disabilities, while courses should be focused on the following topics:

• Equality and human rights

• Knowing your own body

• Increasing self-esteem and self-confidence

• Creating friendly and partner interpersonal relationships

• Masturbation and non-coital activities

• Pregnancy, childbirth, family

• Protection against unwanted pregnancies, sexually transmitted diseases and HIV

• Resistance to sexual coercion and abuse

• Gender specifics

• Peculiarities of sexuality of people with mental disabilities, where the degree of disability and the biological, psychological and social age of individuals in the target group must be respected.

Group 2 - staff caring for people with mental disabilities, with McCarthy and Thopmson (1997, cited in Šustrová, 2008) emphasizing that sexuality education is useful not only for people with special needs themselves, but also for staff, and for the following reasons:

• realize better that people with special needs are also sexual beings, that their sexuality is not fundamentally different from the sexuality of anyone else;

• promote and facilitate the sexual education of people with special needs;

• they will not be afraid, as before, of the consequences of the sexual life of people with special needs;

• be better informed about the peculiarities of mutual partnerships and sexuality of the mentally handicapped, which are different from his / her own experience;

• further disseminate optimal strategies (health policy) and ways of working with people with mental disabilities in the field of sexuality and, where none yet exist, point to the need to develop them;

• increase their self-confidence if they were to take part in sex education for people with special needs.

Group 3 - parents of people with disabilities. They should also participate in sex education programs to understand the sexual needs of their children and not to fear their manifestations of sexuality, but on the contrary to be able to provide them with adequate support (Popper, 2002).

Parents are extremely important members of the team that accompanies the mentally handicapped in preparation for life and in most cases in adulthood. They should participate in the sex education of their children, because, as Šedá states (In Kolektív autorov, 2004, p. 71), *„sex education should start practically from the birth of a child".*

Group 4 - individuals with mental disabilities, who form the most important target group of sex education. The inspiring material for work in the field of sexuality of people with mental disabilities is the training manual of Dixon (1988, cited according to Juhásová, 2012). Through the manual, clients can be educated in the field of perception of their own body, hygiene and lead to the development of basic communication skills, decision-making for themselves in the field of sexuality. It offers a wide range of group interactive exercises along with a rationale for their usefulness:

• Communication - as people with mental disabilities often have problems with both verbal and non-verbal communication, they can increase their social competence in building partnerships through the development of communication skills. The exercises in this part are mainly focused on eye contact, touch, talking, listening, trust, cooperation, expressing feelings.

• Body awareness - when consolidating our own self-esteem and building good relationships with other people, it is important to learn

to be aware of ourselves, our body, our feelings, what we like about us. Since people with mental disabilities usually have very vague, often missing or negative ideas about their own body, they formulate negative thoughts about touch. Exercises are therefore focused on self-awareness and increasing self-confidence.

• Self-esteem - the exercises in this section aimed at identifying the positive aspects of oneself as well as others and respecting each other, which ultimately contributes to taking more responsibility for oneself in contact with other people.

• Taking care of yourself - taking care of yourself is not only an important part of your own health and self-esteem, but also the health and well-being of others. This section therefore includes exercises focusing on changes during puberty (including menstruation) and related circumstances that affect physical, mental and emotional health. Emphasis is also placed on recognizing the differences between public and private spaces and behaviors.

• Relationships - this section focuses on the acquisition of social skills that help develop relationships with other people. The techniques offered mediate the practice of recognizing full-fledged partnerships from abuse.

• Sexual Being - The exercises in this section focus on exploring one's own sexual feelings, masturbation, degrees of partnering, non-coital and coital activities, the ability to decide what is and what is not sexually pleasing, and the ability to refuse sexual activity.

• Pregnancy, childbirth, parenthood - although many women with a mental disability can never get pregnant and many men with a mental disability do not have the ability to conceive a woman, there are still a significant number who can produce offspring. Therefore, it is important that they are educated about what pregnancy is, childbirth and what obligations, duties and responsibilities parents have towards their children.

• Sexual health - people with mental disabilities are educated about sexually transmitted diseases, ways to prevent them. Exercises in this part are mainly focused on the presentation of contraceptive options and protection against sexually transmitted diseases.

According to a sexologist (Procházka, In Kolektív autorov, 2009), sex education for sexually healthy people with mental disabilities should include the following points:

• Count with less understanding, but choose correct terms, explain (repeatedly).

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- Vulgar expressions lead to an emotional reaction and loss of attention.
- Count on faster fatigue (broken down into several blocks).
- Count on internalized negative attitudes towards sexuality and break them down.
- Use tools, nonverbal communication.
- Integration of sexuality into social relationships, creation of conditions for the sexual life of clients (privacy, tolerance, openness in communication).
- Masturbation is possible, but it is not the only possibility of sexual discharge (shouting, orgasm in sleep).
- They can survive anything, but they must behave responsibly.
- An individual with a mental disability may fall in love with a caregiver, a social therapist, but the responsibility always lies with the worker.
- Sexual devices pose a risk - jamming in the cavity, injury, hygiene.
- Cognitive disability does not mean emotional handicap.
- Try to present moral principles without moralizing.

According to Šustrová (2008), it is necessary to inform parents or other relatives about the sexual education of people with special needs. Those in daily contact with people with special needs can be helpful in sex education. Emphasis should also be placed on an individual approach and the ability to understand a given topic should always be monitored in the form of an interview. In sex education, it must be reiterated that violence in relationships and in sex is unacceptable.

Experts working directly with people with mental disabilities agree that sex education can only be implemented on the basis of an individual approach to clients, given the severity of their degree of disability. For individuals in the zone of deep mental retardation, sex education is problematic, in many cases it would probably not bring the desired result. Some of those affected may experience pleasure, for example in response to touch, but it is debatable whether or to what extent it is a manifestation of sexual instinct. As a result of a profound degree of mental disability, the manifestations of sexual instinct are mostly persistently latent.

In the sexual education of individuals with mild and moderate mental disabilities, emphasis must be placed on the social area. Ability to talk together, understand each other, resolve conflicts. Information needs to be made available to clients in a short, very specific form, using simple

terms. The best way is to learn through play and experience the game. Suitable topics are: male and female differences, maintaining physical hygiene, cultivating sexual instinct (learning the principle that sexual behavior is an intimate thing and does not belong to the public), orientation in who is a stranger and who is a friend, when it is necessary to stop expressions of affection, how to protect yourself from sexual violence, friendship, love. The most suitable methods of sexual education are dialogical methods (free or guided dialogue), staging methods (thematic and role plays, puppet and puppet play), working methods (handicrafts, cooking, workshop work, cleaning work), music therapy (dance, play on musical instruments), sports (Mokrá, 2012).

An example of the implementation of sexual education in the conditions of a home of social services

Sex education in institutional conditions has several pitfalls. Certain conditions for the implementation of sex education should be met, e.g. co-education of the facility, the possibility of establishing social contacts with the wider environment, the integration of clients into society, reducing the number of clients in the rooms, enough privacy and respect for the intimacy of clients.

We present one of the possibilities of implementing sex education in institutional conditions.

In the field of sexual education of individuals with mental disabilities, three areas intersect:

1. cognitive (cognitive) - consisting in understanding and acquiring a certain amount of knowledge,

2. emotional - characterized by acceptance and formation of opinions and attitudes,

3. will - manifested in actions and behavior in which the target area is the will.

From these areas we have several goals that can be fulfilled through sex education.

• Expressive means, such as movement, gestures, haptics, to introduce the topic of human sexuality and emotional affection to clients.

• Take into account the needs and ideas about the behavior of men and women, support an individual attitude to their own sexuality.

• To teach clients that they have the right to freely develop and make decisions for personal development within their means.

• Taking responsibility for your sex life and behavior - "Just as much rights as there are responsibilities!"

• Explain to clients the content of the concepts of friendship, love. marriage, family, sex.

• Help clients develop positive self-confidence, cultivate self-esteem and develop respect for others.

• To cultivate in clients the ability to choose on the basis of the right decision, even if they are exposed to negative pressure (assertiveness).

• Shape clients' social skills in interaction with others: create and manage relationships.

• To lead clients to the formation of personal safety, to know the differences between appropriate and illegal body touches.

• To lead clients to gradually realize and master their sexual role with regard to social - moral norms of mutual behavior, to emphasize the importance of friendship and friendship, which helps to develop interpersonal relationships - empathy, communication skills.

• Lead clients to understand love as an essential component of sexuality.

• To provide clients with adequate information about the anatomy and physiology of the reproductive system of women and men, to acquaint them with the process of reproduction, intrauterine development of the fetus, including the course of pregnancy and childbirth.

• Explain to clients the risk of sexual activity - sexually transmitted diseases, unwanted pregnancy.

• Emphasize the need for clients to observe personal hygiene.

• Educate clients in an appropriate way about the ethics of intimate life.

Criteria for selecting clients:

• Approximately the same mental and social age.

• Willingness of parents to communicate and cooperate in the topic.

• The same number of boys and girls, respectively. men and women, as we are talking mainly about adult clients.

• Small community (max. 8 clients).

Criteria for choosing a lecturer

• Graduate of training on sex education for people with special needs.

• Experience working with clients with mental disabilities.

• Male - there is no male role model in all social services facilities.

• The partner for some topics will be the social worker of the facility.

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Proposal of the thematic plan - sex education

September:
• Month-long topic: "GETTING TO KNOW THE GROUP".
• Initiation, mutual acquaintance, expression of trust.
• Formation of social and personal rules, group secrecy.

Activity no. 1: TOUCHES

Objective: To create a positive atmosphere full of trust, mutual acquaintance of clients.

Accessories: eye scarf for half the players

Procedure: We divide the clients into two groups A, B. The half marked A sits down or steps into the row with a gap for tightening and closes his eyes. Each member of Group B sits down or steps in front of one member of Group A. At the direction of the leader, the player of group A tries to gently touch the face of the player of group B for a limited time (1-2 minutes). Group B then resigns. Each of the Group A clients will try to guess who they had in front of them. In the end, he tells the others how he knew the person in question, and conversely, the members of the second group express whether they were pleasant to the touch or not.

October:
• Month-long topic: "MY FAMILY"
• My family and I, our family relationships.
• Respect and behavior towards parents, intergenerational relationships in the family.
• Kinship, the importance of developing relationships in the wider community.
• The role of marriage and the family in society.

Activity no. 2: RODOSTROM

Objective: To highlight the importance of the family and its members in the life of the individual.

Tools: photos of family members, drawing, glue, colored markers

Procedure: Each client creates his own family tree of his own family, on which he sticks photos of its members and states what they are important to him. Finally, everyone describes what their own family should look like, who should all belong to it.

November:
• Month-long topic: "FRIENDSHIP"
• What is friendship?
• Is it important to have a boyfriend / girlfriend?
• I like my friends because …

Activity no. 3: FRIENDS MEETING

Aim: Developing empathy, the ability to express feelings and emotions to other people.

Aids: Orff's musical instruments

Procedure: Clients choose musical instruments from the menu, are divided into 2 groups (arbitrarily) and placed in opposite parts of the room. Two players (one from each group) will walk diagonally from opposite corners of the room, while both gently playing their instruments. In the middle of the room, they stop, express their current feelings from the meeting with a short play on a musical instrument, then each of them is selected to the opposite corner of the room.

December:
• Month-long topic: "I LOVE"
• Love - City – Sex
• I also like
• Beware of people I don't know - preventing sexual, physical and mental abuse

Activity no. 4: I LOVE YOU / ADVICE

Objective: To awaken positive emotions, sympathy for an individual of the opposite sex.

Aids: heart made of paper or other material, Orff's musical instruments

Procedure: During the game, each player sits on a chair and holds a heart of paper (or other material) in his hand. The selected client chooses a client of the opposite sex whom he likes and gives him a heart, hugs him and takes Orff's tool from the center of the circle. They give the same instrument to their friend and together they imitate the game and try to harmonize rhythmically.

January:
• Month-long topic: "FEELINGS AND NEEDS"
• What is pleasant and what is already unpleasant
• What they like to wear MAN – WOMAN
• What gifts are appropriate
• Self-identification

Activity no. 5: MOSAIC

Aims: Distinguishing between women and men, finding common and different features.

Tools: cut-out pictures of men and women (approximately the same size), glue, 2 large sheets of paper (flipcharts)

Procedure: Clients may (or may not) be divided into two groups (randomly, by gender, etc.). They have cut-out pictures at their disposal and their task is to put together the body of a man and a woman. Finally, it is appropriate to distinguish what clothes and accessories are worn by women and which men.

February:
• Month-long topic: "ADULTS"
• MAN - WOMAN – CHILD
• I am an adult - what now?
• Love … the most pleasant thing in life

Activity no. 6: ADULTS

Objective: Simulation of common life situations that become adults.

Tools: input papers

Procedure: We divide clients into pairs, with each pair choosing one ticket with the assignment. We read the client's assignment - these are various situations common in the daily life of adults, e.g. partner forgot about his partner's birthday, etc. Later we can use this game for other, more serious topics, e.g. the woman informs the man that she is expecting a child, etc. Clients prepare a scene according to the assignment and play the situation to other members of the group. Finally, a discussion follows.

March:
• Month-long topic: "MY BODY"
• Perception and experience of one's own body (feelings and their expression).
• MAN - WOMAN - identification (own) - physical signs, expressions, clothing, gestures.
• What do I like about my body and what don't? Why?

Activity no. 7: MY BODY

Objective: Perception and awareness of one's own body.

Tools: roll of paper (approx. 100 cm wide), scissors, colored markers

Procedure: The lecturer distributes sheets that are approximately the size of the clients. Clients lie down on the sheets and the lecturer draws their silhouettes with a black marker. Each client shows on paper how they see their body. In the end, he expresses what and why he likes and dislikes on his body.

April:
- Month-long topic: "HYGIENE"
- MAN - WOMAN - body, sex, hygiene
- Do I take care of myself properly?
- I want to like it
- Protection against sexually transmitted and other diseases

Activity no. 8: WHAT IS GOOD FOR ME?

Aim: To realize what is suitable for the body and what is harmful to it.

Aids: packaging of various products that are suitable and, conversely, unsuitable for personal hygiene and a healthy lifestyle

Procedure: The lecturer spreads the packaging of various hygienic, food and other products on the table or ground - e.g. cigarettes, alcohol, juice, deodorant, inserts, condoms, intimate shower gel, vitamins, sweets, etc. Together with clients, they determine which of these products are suitable for them and which are not. A discussion follows.

May:
- Month-long topic: "SEX CHARACTERISTICS"
- Secondary sexual characteristics
- The genitals of men and women
- I also have a genital organ

Activity no. 9: MAN - WOMAN

Aims: Distinguishing between women and men, finding common and different features.

Tools: flipchart, drawn outline of female and male body, photos of female and male body, colored markers

Procedure: With the help of photographs, draw individual details on the outline of the female and male body, without exception of the genitals. All members of the group take turns in completing the drawing. Finally, it is appropriate to evaluate the activity and share the impressions from it.

June:
- Month-long topic: "EVERYTHING HAS ITS TIME"
- LADY – GENTLEN
- Group games - for the doctor, for friends, for partners, for parents, etc.

Activity no. 10: GAME ON CONFIDENCE

Objective: To develop trust and empathy among players of the opposite sex.
Aids: Orff's musical instruments, scarf

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Procedure: Clients form pairs of the opposite sex, one of the pairs chooses Orff's instrument and ties his eyes with a scarf. The other of the pair grabs his partner's shoulders. The role of the blindfolded client and Orff's instrument is to move freely around the room while playing the instrument. The second task is to navigate the partner so that he does not encounter an obstacle.

Conclusion

At the end of our article we present problematic areas that may occur during the implementation of sexual education in institutional conditions, as published by Kozáková (In Kolektív autorov, 2004).

a) Problem areas related to the possible risks of the "institutional facility":

• Large "institutional facilities" (risk of loss of privacy, isolation, abuse, confusion of roles, need to adapt to the regime, the needs of other citizens).

• Uncoated types of equipment (frequent pseudo-homosexual relationships).

• Lack of client privacy.

• „No time" to solve „these problems".

• It is not always in the client's interest (often personal convenience).

• The unnatural nature of institutional care (eg family-run facilities are missing in year-round facilities).

• Insufficiently addressed "basic rules" of partnership and sexuality of persons in the facilities - uniformity in procedures and approach of staff is essential.

b) Problem areas related to the specifics of learning of individuals with mental disabilities:

• Sex education reflects the general specifics of learning for people with mental disabilities.

• Interpretation alone is not enough, they cannot transfer experience to a typical situation, we are not satisfied with the forms of work used in the intact population, a higher degree of concretization and clarity is needed, not only appropriate information, but also social skills training.

• The ideas of clients without sex education and the possibility of natural contact with the opposite sex are often idealized, unrealistic, and romantic films are often a model.

• Clients often fail to enforce their rights.

• Common dating problems that are often supported by limited contact with the outside world.

c) Problem areas related to the attitudes of staff, parents:

• Man's own inhibitions, shame.

• Shame to take care of any problems with the child's parents.

• Prejudices, taboos, "closing your eyes" to problems - trying to solve them "in silence" and as quickly as possible.

• Approaches that situate the client in the role of a lifelong child.

• Punishment (without explanation) for sexual manifestations (masturbation).

• Evaluation based on our perception of "normalcy" - we are not based on the needs of the client, but on what we consider "normal".

• Application of our own measures and attitudes.

• Insufficient training of staff working with clients - how to respond and solve problems correctly.

• Lack of literature, professional training, training of psychosocial skills.

• Reluctance to take an interest in the problem.

• Attitudes of the device in conflict with their own attitudes.

• Discrepancy between the wishes and attitudes of parents and facilities.

• Cooperation with a family that does not want to hear about this issue.

• Inappropriate presentation of sexuality in the media.

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Chapter 4

Psychology and pedagogy of modern education

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Preparing students of pedagogical universities for work in a post-COVID educational environment with children with ADHD

Abstract. The article reveals the relevance of introduction of distance learning into the educational process, the challenges faced by Ukrainian education (from preschool to higher) in connection with the long period of quarantine. Attention deficit hyperactivity disorder (ADHD) is characterized and its symptoms are described. The definitions of the notions "distance education" and "distance learning" are given. The elements of the educational model "liberal arts and sciences" are described, which is based on the principles of flexibility and adaptability, and meets the social order in the post-covid educational environment and is designed to strengthen future teachers' motivation to learn throughout life, teach them critical thinking, collaboration, creativity and communication (soft skills). It is found out that the proposed form is characterized by the flexible curriculum that combines the requirements of the breadth of disciplinary coverage with the depth of study of individual disciplines (courses), encourages interdisciplinarity, freedom of choice and organization of professional quasi-activity. The possibilities of using "Social Bubbles" in the conditions of post-COVID educational environment are concretized and specified.

Keywords: post-COVID educational environment, training of students, children with ADHD.

Topicality

In Ukraine, distance education is perceived as an innovation, but in 2013 the Regulation on distance learning was published [5], and the right of a person to receive education in various forms, including distance, is provided by the Law of Ukraine "On Education" (2019) [2]. The organization and implementation of distance learning is the subject of numerous scientific investigations of national and foreign researchers, in particular, V. Bondarenko, V. Kukharenko [3], O. Mukoviz [4] and others.

However, despite the significant scientific achievements and legal support, the preparation of teachers for the organization of distance learning (during training in higher education institutions and at upgrade training courses), given the rapid development and emergence of new information technologies, needs to be improved.

First of all, it should be recognized that Ukrainian education for the first time faced challenges that are serious enough for all levels of education – from preschool to higher, in particular: presence of digital inequality between the participants of the educational process due to lack of comprehensive Internet access, necessary equipment and devices; general unpreparedness for distance education, due to the following factors: absence of methods, technologies and software for distance learning both for the students of higher education institutions and preschoolers; lack of skills to work in a team, group, collective and interact with others online; deepening of educational inequality between preschool children due to the lack of daily communication with educators (especially in kindergartens located in rural areas, as well as for children with special needs), etc.

Thus, pedagogues-practitioners during the forced transition to distance learning during the quarantine in 2020-2021 often had to study the functionality of platforms for organization of distance learning, often using the "trial and error method", without solid theoretical knowledge, and thus immediately in practice, choose more convenient, effective and, most importantly, free options. All this required considerable time, which could not but affect the quality of the organization of the educational process. On the other hand, this situation allowed to gain valuable practical experience, which in the future will significantly improve the quality of education.

Unfortunately, we should state that there is a lack of researches on the impact of the pandemic on the mental and psychological health of children and adolescents. Quarantine measures during the pandemic

led to the high unemployment and deficiency of funds, especially for self-employed workers. According to S. K. Brooks et al., a long period of quarantine and restrictions on freedom of action are risk factors for serious psychological impact [11]. According to researches of G. Wang et al. [24] prolonged quarantine, fear of infection, frustration and boredom, lack of contact with peers, pedagogues and lecturers, narrowed or insufficient personal space at home, loss of loved ones cause serious psychological consequences for children and adolescents.

Scientific significance

In recent years in Ukraine, as well as around the world, the number of preschool children who have symptoms or diagnoses indicating developmental disorders is increasing. The most common are autism spectrum disorders, cerebral palsy, communication disorders (speech, pronunciation, social communication disorders), disorders of attention deficit and hyperactivity disorder (abbreviation in Latin – ADHD).

Symptoms of ADHD are usually observed in children from 3-4 years of age, and always – up to 7 years. Problems are especially acute in children aged 4-6, when the preschooler becomes more independent from adults, gets new responsibilities, prepares for the transition to the new stage of their life – schooling. In 2004, the International Association of Child and Adolescent Psychiatry and Allied Professions (IACAPAP) recognized disorder of attention deficit and hyperactivity disorder as a No.1 problem in the mental and psychological health of children and adolescents. Every year the number of children suffering from this syndrome increases. Analysis of the prevalence of ADHD suggests that 60% of adults who were diagnosed with childhood disorders (or were diagnosed as adults) have some problems with the syndrome [8]. Most researchers are inclined to believe that ADHD occurs worldwide and in all cultures. Researchers note that the manifestations of hyperactivity syndrome continue to persist in 70% of adolescents [8]. According to other researchers, this problem occurs in 2% of the adult population. In addition, it is much more difficult to recognize a hyperkinetic disorder in an adult than in a child. The frequency of ADHD in primary school children is 3-10% (there is even 28% data [1]). According to published data, in the United States the number of hyperactive children is 4-20%, in the UK – 1-3%, in Italy – 3-10%, in China – 1-13%, in Australia – 7-10%, in Ukraine – 12 % [14, 22].

The manifestation of the disorder is more pronounced in children in the age range of 6-8 years. According to world data, only 1/5 of the total number of hyperactive children comes to the attention of experts [22, 23]. The increase in the number of detected cases of children diagnosed with ADHD is associated by many authors with the growing awareness of this problem. According to official data from the Ukrainian Research Institute of Social and Forensic Psychiatry and Addiction of the Ministry of Health of Ukraine, ADHD is observed in 12.2% of schoolchildren, although there are other studies showing 28% of the child population in different countries [1].

In a research by J. Biederman et al. the relationship between indicators of Rutter's adverse conditions (including family conflict, social class, family size, maternal psychopathology and paternal crime) and ADHD, comorbidities and functioning was studied [9]. The authors concluded that low social class, maternal psychopathology, and family conflict were largely associated with psychopathology and functional disorders, with gender control, paternal ADHD, ADHD status, and maternal smoking during pregnancy.

Researchers J. D. Palacio-Ortiz et al. analysed current results on the impact of the post-covid environment on children and adolescents who have psychological problems, in particular suffering from ADHD [17]. The authors offered advice on the assessment of the state and treatment of children and adolescents with hyperactivity disorders and attention deficit disorder in the context of the COVID-19 pandemic, which was developed based on research and recommendations of the Royal College of Psychiatrists [20]. Against the background of the COVID-19 pandemic, an unprecedented crisis unfolded, which affected all spheres of public life, this is especially noticeable in developing countries. Thus, researchers L. Duan, G. Zhu [13] call a number of preventive measures to avoid infection with the virus – social distancing and isolation, which have a significant impact on the society. Such living conditions of children and adolescents in a post-covid educational environment require psychological, social and neurobiological adaptation, because their psyche is undergoing serious trials.

Training of students of pedagogical universities to work in a post-covid educational environment with children with ADHD has certain peculiarities. These peculiarities were taken into account by us during the introduction of elements of the educational model "liberal arts and sciences".

Results of the research

Let's define that distance education is the content that is provided by a pedagogue/teacher and an educational institution for an applicant – from a preschool child to a student. Distance learning is a set of modern digital technologies that provide information delivery in the interactive mode through the use of information and communication technologies. Under the digital model of training students of pedagogical universities, we understand its differences from the traditional one. We see the main risk of "digitalization" of training of the future teachers in the extensive filling of the educational environment with digital technologies, understanding them only as a new name. However, we emphasize the significant differences in the principles of building the digital environment as "information and education", namely in the focus on meeting the individual needs of each person. It is not a person who adapts to group (or standard) processes, but the process is built in the logics of the needs of each individual.

If we simulate the training of students in the post-covid educational environment, universities face a priority task – to provide educational logistics focused on each student according to individual needs, rather than within the study group, as is the case in the traditional model. Thus, emerging as elements of distance learning, digital learning through models of blended learning blurs boundaries, i.e. integrates the entire resource base of a higher education institution, and student training becomes holistic.

We proposed to use elements of the educational model of "liberal arts and sciences" at the university, based on the principles of flexibility and adaptability [10], which corresponds to the social order – the work of students, kindergarten teachers and university teachers in post-educational environment. Education in this model is designed to strengthen the motivation of the future teachers to learn throughout life, to teach them critical thinking, collaboration, creativity and communication (soft skills). The proposed form is characterized by a flexible curriculum that combines the requirements of the breadth of disciplinary coverage with the depth of study of individual disciplines (courses), encourages interdisciplinarity, freedom of choice and organization of professional quasi-activities [12, 15]. The proposed model was implemented by involving students in the interactive educational environment.

We used the following research methods: observation, comparison, generalization and experiment. The research consisted of several stag-

es: empirical study of the organization of students' work with children with ADHD under the conditions of distance communication (learning); development by the future pedagogues of a system of exercises of psychomotor loading and educational situations for preschoolers taking into account distance communication; analysis, description and generalization of research results.

We involved in the experimental work 28 kindergarten teachers (city of Vinnytsia) who work with children with ADHD in kindergartens and child development centres, as well as 28 fourth-year undergraduate students studying at a distance (Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University). It should be noted that the information offered by students was provided to parents, and they decided at what convenient time for them and the child this information (audio, video, texts of fairy tales, poems, examples of children's experimentation, play, art and other activities of children of early and preschool age) will be offered to their own child, taking into account his or her psychophysiological and emotional state. The parents were sent the recommendations of UNISEF and the Ministry of Education and Science of Ukraine "Children return to kindergarten" [6].

For educators of kindergartens and development centres, the introduction of so-called "social bubbles" was proposed, which are common not only in Asia but also in European schools [Pollak]. "Social bubble" is defined as a group of people with whom you have close physical contact. The peculiarity of the opening of schools in September is the division of children into small groups of "bubbles", i.e. children will learn and communicate in their small groups. In these groups children do not need to wear masks and keep distance. The groups will have individual schedule and break times, including lunch time. Thus, children will not have direct contacts not only between classes, but also within classes. If someone within the group falls ill, the whole group will be sent home. All teachers (and parents) will have to master tutoring competencies for individual pedagogical support of children's education [6, 19].

According to the recent study by the University of Oxford, the "social bubble" is a strategic way to combat the spread of the virus, limiting social interaction to a certain group of people. This interaction strategy is designed to gradually return to normal life, while limiting the transmission of the chain of infections [18]. The biggest fears among kindergarten teachers arose about whether preschoolers would be able to quickly understand how to behave in their "bubble", how to keep

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their distance so that the "bubble" was intact and complete for longer. Of course, kindergarten teachers were quick to come up with ways to introduce bubbles, to bring children together, and so on. In our opinion, "social bubbles" can be considered as an option for working with children with ADHD. However, the "bubble" can be created only under the condition of observance of the known "magic number 7 ± 2" (other names – "Miller's wallet", "Miller's law"). The psychologist George Miller on short-term human memory works in human resource management systems [16]. Thus, the number of children in the "bubble" can be from 5 to 9 people.

Beginning to prepare students to work with children with ADHD, teachers together with parents offered to introduce the child to the means of communication – to connect to Viber, WhatsApp, Skype, ZOOM, etc., try to have a conversation with acquaintances or significant adults (the father or the mother can be in another room), with other children, but not forcing, watching the daughter or son, helping to learn the rules of conduct and culture of online communication. And only then connect to communicate with the teacher. At first it was individual communication with the child, and later – connection to work in group. The results of studying the state of readiness of the future pedagogues to implement distance learning for children with ADHD in a post-covid educational environment indicate the predominance of the sufficient level of this readiness. A survey conducted among students and teachers of preschool education institutions confirmed the received results. The analysis of the results of the protocols made it possible to derive the averages for the levels presented in Fig.1.
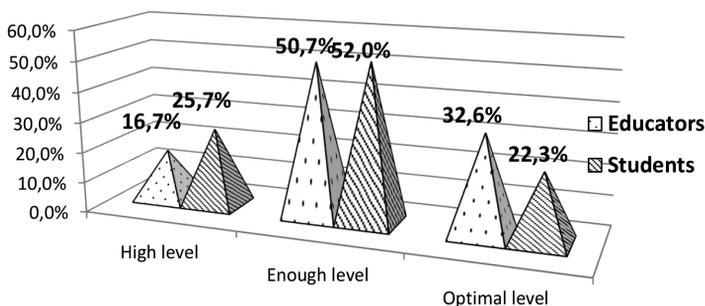
Fig. 1. Levels of readiness of the future pedagogues and teachers of preschool institutions to work with children with ADHD in a post-covid educational environment.

Thus, the level of readiness to work with children with ADHD in the analyzed groups was almost similar. The number of kindergarten teachers, who had the optimal level (32.6%), was more than students, almost 10% (students – 22.3%). This can be explained by the fact that under the conditions of sharp transition to online interaction, it turned out that some pedagogues do not have access to high-speed Internet, which made it impossible to interact with children through video conferencing services.

Most teachers of preschool education institutions have a low level of material support; they do not have the opportunity to purchase modern multimedia equipment (laptops, computers, smartphones, etc.). Other participants of the educational process faced typical problems: obsolescence or incompatibility of computer devices, use of unlicensed software, problems with settings for the proper functioning of devices, and so on.

It should be noted that the students of the Pedagogical University also faced the mentioned problems. Financial opportunities did not fully solve the problem of purchasing the necessary equipment and access to the Internet. Therefore, in our opinion, the data obtained on the sufficient level of readiness of kindergarten teachers (50.7%) and students (52.9%) are almost the same.

There are also significant differences in the indicators of high level between the future pedagogues (25.7%) and teachers of preschool education institutions (16.7%) by 9%, which is explained by the more active use of higher-end smartphones by young people. This allowed to conduct classes with children in the post-covid educational environment more effectively, actively using Viber, WhatsApp, Skype, ZOOM, interesting GOOGLE services that are accessible, free and easy to use.

Conclusions

The results of the conducted research confirmed and supplemented the already known developments, as well as contributed to the receipt of the new data on the problem studied. According to the results of the research, three groups of data were obtained: confirmed data (O. Slobodin et al.) on the development of physical and emotional states of children with ADHD; confirmed and expanded data (E.M. Bronfman) on the possibility and feasibility of using elements of the educational model "liberal arts and sciences"; concretized and specified the possibilities of using "Social Bubbles" (A. Pollak) under the conditions of post-cov-

id educational environment; the results of our research supplemented the conclusions of the scientists (L. Zdanevych, K. Kruty, et al.) on the effectiveness of the formation of competencies in the preparation of students.

The new results of the work include: substantiation of the digital model of training students of pedagogical universities; development of organizational and methodological support for training students to work in the post-covid educational environment with children with ADHD.

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Mental characteristics of the individual in the conditions of self-isolation

Abstract. The article examines the features of psychological well-being, emotional state and anxiety of students caused by the emergent situation of the COVID - 19 virus pandemic in different living conditions. The main activities of students living in the period of self-isolation at home and in conditions of limited space are described; the characteristics of individual emotional reactions (both positive and negative in conditions of self-isolation) are described. The self-isolation regime clearly affected the psychological state of each individual. Personal characteristics in adolescence (for example, formed psychological behavioral patterns) and social factors, the presence of support from family and friends, are the determining factors in the process of forming emotional states. However, one person may have different answers in different conditions. The transition to distance education for students in a limited space, especially a sharp decline in direct communication in adolescence, led to a change in the mental states of students, in particular, the response to changes in the learning process.

Keywords: self-isolation, adaptation, mental states, frustration, individual emotional reactions, students.

Urgency

Among the most pressing problems at the moment is the situation of "self-isolation". People are forced to stay at home, isolated from society. There is no possibility to walk, go to the

park or visit any entertainment program. And if a person lives alone, there is no live communication, then in such conditions it is difficult to remain calm, patient.

The concept that most fully reflects the variety of circumstances, external and internal causes that cause a mental state, is the concept of "situation". The situation is considered as an objective set of elements (events, conditions, circumstances, etc.) that have a stimulating, conditioning and corrective effect on the subject, i.e., determining its activity [5, 13].

At the same time, the external environment is presented not only in its objective and functional form, but also as a set of social and interpersonal relations. At the same time, the situation is a concept that has a psychological essence, a complex, multi-dimensional and multi-level mental representation. An important aspect of understanding the situation in the context of the problem of mental states is to consider it as a complexly organized subjective image of objective reality. It is in the context of the interaction of the individual with life situations that it is necessary to look for the cause of mental states.

The study of mental states began to be engaged relatively recently. N. D. Levitov also owns the first monograph on mental states. After his works, psychology began to be defined as the science of mental processes, properties and states of a person. N. D. Levitov defined mental states as "an integral characteristic of a person's mental activity and behavior over a certain period of time, showing the uniqueness of mental processes depending on the reflected objects and phenomena of reality, previous states and personality properties" [10].

Later, the question of mental states was addressed by B. G. Ananyev, V. N. Myasishchev, A. G. Kovalev, K. K. Platonov, V. S. Merlin, Yu. E. Sosnovikova and others [2, 7, 17, 20]. In other words, as A. O. Prokhorov, B. G. Ananyev, F. E. Vasilyuk, and others note, various forms of human behavior and activity occur against the background of a certain set of mental states that can have both positive and negative effects on the adequacy and success of behavior and activity in general [1, 15, 20]. A. O. Prokhorov identified three key links in the emergence of any mental state. First, it is a situation that expresses the degree of balance (balance) of the mental properties of the individual and the external environmental conditions of their manifestation in the life of the individual. Secondly, it is the subject itself, which expresses the individual's personal characteristics as a set of internal conditions (past experience, skills,

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knowledge, etc.) that mediate the perception of the impact of external environmental conditions. Third, it is a system-forming factor that combines various situations and psychological characteristics of the individual into a complete system [15, 16].

Total quarantine-a forced and necessary measure to combat the new coronavirus pandemic: this is how we care not only about our own health, but also about the well-being of people close to us. At the same time, long-term self-isolation affects not only the rate of infection, but also mental health.

There is very little research on the impact of quarantine on mental health. The results of those that are available show that during isolation, people have increased levels of anxiety and frustration, irritability, insomnia, emotional exhaustion and outbursts of anger, exacerbate the symptoms of depression, anxiety disorders and obsessive-compulsive disorders. It is very difficult for families where children with autism spectrum disorders, attention deficit hyperactivity disorder, and behavioral disorders grow up.

The development of the personality of a modern person is caused by a complex set and dynamics of socio-cultural, economic, technological and psychological factors that determine the conditions of existence and life in the social environment. In this regard, the problem of research and diagnosis of anxiety is of great practical importance.

It is very difficult in self-isolation for people who, due to mental characteristics or internal circumstances, find it difficult to be alone. It is also difficult and dangerous to find yourself in self-isolation in a family in a situation of domestic violence, alcoholism, poverty. With external pressure, all internal and intra-family conflicts, crises, and problems become more acute. High levels of stress can cause exacerbation of chronic somatic and psychosomatic diseases, provoke anxiety, panic and depression. The easiest way to self-isolate is for people who are comfortable in the environment in which they are quarantined. This can be loneliness, when a person is easy and good with himself or herself, and communication with loved ones, with whom there is spiritual contact and agreement. It is easier if there are supports and resources: money, health, a stable job, a supportive environment, friends, relatives. It is easier to tolerate restrictions if there is an important thing in life, passion, meaning, self-realization, creativity.

The relevance of this research is the need to obtain additional information about the features of psychological well-being, emotional state

and anxiety of people living in a particular historical and socio-economic period.

Mental states are most often manifested as a reaction to a situation or activity and are adaptive, adaptive in nature to the constantly changing environment, coordinating the capabilities of a person with specific objective conditions and organizing his interaction with the environment [13].

During self-isolation, so-called difficult states may occur. But before proceeding to the analysis of difficult conditions, it is necessary to characterize the conditions that accompany the normal realization of life needs [3]. Such states in the conditions of everyday, professional activity are defined as states of functional comfort, that is, it means that the means and working conditions of a particular person fully correspond to their functional capabilities, and the activity itself is accompanied by a positive emotional attitude to it [6, 12].

This condition is characterized by a fairly high activity, accompanied by an optimal strength of the nervous and mental functions of a person. However, there are almost never ideal conditions for any activity. Most often, there are large or smaller, external or internal disturbances, which can significantly change the normal active state, turning it into a difficult one. In this case, it matters both the type of interference and the phase of activity in which this interference operates.

The results of the study

The purpose of our study was to study the mental states of the individual during the period of self-isolation. To achieve this goal, 20 students living in university dormitory and 20 students experiencing a pandemic at home were tested. We assumed that the mental states of students living in a dormitory have distinctive features from the mental states of students living at home.

To identify the problem of students ' mental states, the following methods were used [14]:"Self-assessment of emotional states", developed by American psychologists A. Wessman and D. Rix, the method of subjective assessment of situational and personal anxiety by C. D. Spielberger and Yu. L. Khanin, the method of "Self-assessment of anxiety, frustration, aggressiveness and rigidity" is intended for self-assessment of anxiety, frustration, aggressiveness and rigidity [11].

In order to prove the hypothesis that the mental states of students living in a dormitory (group 1) has distinctive features from the mental

states of students living at home (group 2), we need to conduct 3 tests, compare and identify which qualities are dominant in both.

According to the results of data processing using the "Self-assessment of emotional states" method, the following is observed: on the "Calm-anxiety" scale, the majority of subjects (75%) assess their state as anxious, 25% assess their state as calm and well-being. According to the "Energy-fatigue" scale, 74% feel tired, 5% feel a strong desire for activity, 25% feel moderately cheerful. On the "Elation-depression" scale, 50% feel depressed, 35% feel excited, enthusiastic, and 15% rate their condition as good, cheerful. On the scale of "Self-confidence-helplessness", 60% feel weak and unhappy, 30% assess their condition adequately, 10% feel very confident.

After conducting the methods of subjective assessment of situational and personal anxiety by Ch. D. Spielberger and Yu. L. Khanin, we obtained the following results: pronounced situational anxiety is observed in 40% of the subjects, moderate anxiety in 35% and no situational anxiety in 25% of the subjects. 15% experience severe personal anxiety, 30% have moderate anxiety, and 55% have no personal anxiety.

Thus, we can conclude that the dominant state of students during the period of self-isolation is a state of frustration and rigidity with a high level, which is 85%. Most likely, this is due to instrumental aggression, which is explicated as means-methods-techniques, projected on the achievement of a significant goal, aimed at achieving a utilitarian task.

The next study group is students living at home. According to the method "Self-assessment of emotional states", the following results were obtained:

- on the "Calm-anxiety" scale, 10% rate their state as anxious, 3 5 % rate their state as calm and well-being, an adequate assessment of the state dominates, 55%%;
- according to the "Energy-fatigue" scale, 15% feel tired, 40% feel a strong desire for activity, 45% feel moderately cheerful;
- according to the "Elation-depression" scale, the majority of the subjects (75%) assess their condition as good, cheerful. 15% feel excited, enthusiastic, and 10% feel discouraged;
- on the scale of "Self-confidence-helplessness", one person (5%) feels weak, pathetic and unhappy, twelve people (60%) assess their condition adequately, seven people (35%) feel very confident.

After conducting the method of subjective assessment of situational and personal anxiety by D. Spielberger and Yu. L. Khanin, we obtained

the following results: 10% have a pronounced situational anxiety, 25% have moderate severity and 65% of people have no situational anxiety. 30% of the subjects experience moderate personal anxiety, and 70% of the subjects have no personal anxiety.

The results of testing according to the method "Self-assessment of anxiety, frustration, aggressiveness and rigidity" (author O. Yeliseyev) they showed that 40% had a low level of frustration, 35% had an average level, and 20% had a high level of frustration. 80% of respondents have a low level of aggressiveness, 20% have an average level. And also 50% have a low level of anxiety, 10% have a high level, 40% have an average level of anxiety. 20% have a high level of rigidity, 35% have an average level, 40% have a low level of rigidity.

Conclusions

Thus, we can conclude that the indicators of the state of students living at home are at a low level. Most likely, this is due to the fact that these students are with their relatives and friends in a home environment.

We calculated whether there are statistically significant differences in the characteristics of the mental state during the period of self-isolation in students living in a dormitory and in students at home. The significance of the differences was estimated by calculating the Student's t-test [8]. The obtained significant differences in the manifestation of "Calmness-anxiety" (tem=5.8 at p<0.01), «Energy-fatigue» (tem=5.2 at p<0.01), "Self-confidence-helplessness" (tem=4.6 at p<0.01) according to the method" Self-assessment of emotional states " developed by American psychologists A. Wessman and D. Rix. This proves that the majority of students living in the hostel negatively assess their condition, experience anxiety, fatigue and despondency. In our opinion, most students are not adapted to the current situation, are afraid of upcoming events and are not confident in their abilities.

According to the method of subjective assessment of situational and personal anxiety by Ch. D. Spielberger and Yu. L. Khanin, statistically significant differences were revealed in the indicator "situational anxiety" (tem=3.37 at p<0.01). This suggests that students living in a dormitory, at a given time, the state are characterized by subjectively experienced emotions: tension, anxiety, concern, nervousness in this particular situation. This condition occurs as an emotional reaction to an extreme or stressful situation, can be different in intensity and dynamic over time. According to the method "Self-assessment of anxiety, frustration, ag-

gressiveness and rigidity", statistically significant differences were found in the indicators "anxiety" (tem=5.3 at p<0.01), "frustration" (tem=7, at p<0.01), aggressiveness "(tem=5.5 at p<0.01)," rigidity» (tem=7, at p<0.01). It follows that students living in a dormitory have high rates of anxiety, frustration, aggressiveness and rigidity. An increased level of anxiety is a subjective manifestation of a person's distress. In this case, it is the uncertainty of the future and uncertainty. Frustration manifests itself only when the degree of dissatisfaction is higher than what a person can bear. Frustration occurs in conditions of negative social assessment and self-assessment of the individual, when deep personal-meaningful relationships are affected. Rigidity difficulty (up to inability) in changing the planned program of activity in conditions that objectively require its restructuring, "getting stuck" on a certain way of activity, reaction.

Thus, it is statistically confirmed that the mental states of students living in a hostel have distinctive features from students who are in the family circle, at home.

Times of crisis usually lead us to change our usual way of thinking. And this in itself can be a stress for the nervous system [4].

Often, people also start to worry that their excitement itself will harm them, or to believe that with the help of enhanced experiences, you can protect yourself. These thoughts are useless for real security and, moreover, only increase the feeling of anxiety [18].

As a result of the conducted theoretical and empirical research, it is possible to draw conclusions about the changes in the mental states of students that occur during the period of self-isolation. And, as a result, the need to implement recommendations for stress relief, self-protection and motivation for useful activities [9].

Use your excitement to be active and take the necessary measures to protect yourself from the COVID-19 virus based on expert advice, follow your government's instructions on physical distance and staying at home-self-isolation and distancing [7]. Take care of yourself as a whole. Set the daily routine - the same bedtime and wake-up time. Regular exercise at home. Balance your diets (diets related to weight loss should be abandoned now) and regular meals. Avoid daytime naps or shifts in your sleep cycle. Avoid excessive consumption of alcohol and caffeine, as well as actions that you may regret later (for example, fanatical online shopping).

Organize pleasant activities. Pleasant activities help to improve your mood, so it is very important to do things that are fun. Think about the

activities that you like and that you can do at home, and devote time to them every day: listen to music, watch your favorite movies, train at home, cook delicious food and eat it with pleasure, read books, play computer games, chat with friends.

Reduce physical stress and tension during quarantine self-isolation. Studies show that diaphragmatic breathing (slow abdominal breathing) and progressive muscle relaxation (alternating tension and relaxation in order to identify and overcome signs of physical tension) are useful for reducing overall physical tension and promote relaxation. Using these relaxing exercises in your daily life will benefit you. In order to master them, you can use the video instructions that you can easily find on your favorite video resources.

Learn something new that will be useful in life after self-isolation. Learn how to cook a new dish, type blindly, learn new things and additional skills for your studies or work. This will both entertain you and come in handy in life after self-isolation.

It is clear that the effect of COVID-19 on mental states has yet to be evaluated by studying delayed mental responses, especially in adolescence, as well as the long-term effects on mental development. There is also no doubt that new research will be initiated in the near future.

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Fractal-holographic thinking of students: the essence, principles, mechanisms and technologies of formation

Abstract. Authors reveal the content and essence of holonomic approach reveal the basic principles and technologies of fractal-holographic thinking of university students. The artistic and plastic language of art is considered as a means of forming fractal-holographic thinking of students that acts as a fundamental basis for solving educational problems of fractal pedagogy.

Keywords: fractal pedagogy, personality, self-movement, self-organization, fractal-holographic thinking, holonomic approach.

Introduction

In the light of modern trends observed in the context of post-non-classical education, fractal pedagogy should be considered as an important factor in the organization of the space of formation, existence and activity of the individual. The personality appears here not as an object of influence, but as a subject, a "director" of his own actions, defines for himself and constitutes in his life world "his" space, filled with ideas, values, attitudes, ideas about the world, everything that has significance for him at the moment. The fundamental principles of fractal pedagogy can also include the principle of trust in human nature, which asserts the initially positive, constructive essence of a person, laid down in the form of potential.

The consequence of this is respect for the individual, understanding of its value, recognition of the uniqueness and uniqueness of each individual, its right to free development and manifestation of its abilities, which together leads to the most successful socialization and adaptation at all levels of life. Because the essence of being lies in the self-movement, self-organization, through the prism of fractal perception holonomically the integrity of the universe, society and individual human being is seen according to the holographic nature of man as "nested" in the Genesis system, the essence of universal existence. The holonomic approach is a broader, holistic and multifaceted view of understanding the essence of human nature and the entire universe, which is based, as we said above, on a holographic model of the universe and human consciousness [26]. In this regard, the problem of the formation of fractal-holographic thinking of university students in the context of post-non-classical education, which is the basis for the formation and development of the third millennium human being, is of particular relevance.

Materials and methods of research

In the refinement of the definition of "fractal-holographic thinking", considering its essential characteristics in the aspect postclassical education was a synthesis of philosophical, psychological, culturological and pedagogical literature on the problem of the study, which was carried out the analysis of ideas about multidimensional human thinking, has established principles and identified the mechanisms underlying the formation of the fractal-holographic thinking of students in the context of post-non-classical education.

The choice of research methods is determined by its goals, tasks of a particular stage, conceptual approaches implemented in the study, which provided the necessary depth of study of the main aspects of the problem. The purpose of the study was to consider the essence of the concept of "fractal-holographic human" and conceptual approaches to understanding and content of fractal-holographic thinking as a complex interdisciplinary phenomenon, to determine the mechanisms, techniques and methods of its formation among university students. Within the framework of the study, a number of tasks were supposed to be solved.

On the basis of theoretical analysis of literature on the research problem to clarify the definition of "fractal-holographic thinking" in the

context of the theoretical positions holonomes and fractal resonance approach, to show the relationship of the fractal-holographic thinking with the formation of ideas about the new model of the universe, a holographic model of the Universe and human consciousness. In the course of identifying the conceptual and theoretical foundations for the formation of fractal-holographic thinking of university students in the realities of post-industrial society, focus on post-non-classical education and criteria and indicators that characterize the level of formation of fractal-holographic thinking of university students.

Results of the study

Building the scientific concept of "fractal-holographic thinking of man", we were based on philosophical propositions about man as a bio-psycho-socio-cultural-existential phenomenon (Aristotle, E. Husserl, G. V. Leibniz, A. E. Kazachinsky, M. Mamardashvili, F. Nietzsche, V. I. Slobodchikov, V. N. Sagatovsky, V. Frankl, M. Heidegger, etc.), the investment theory of creativity (R. V. Stenberg, T. Lubart, etc.), theories of self-organization (V. I. Arshinov, V. G. Budanov, M. G. Gapontseva, E. N. Knyazeva, S. P. Kurdyumov, V. S. Stepin, N. M. Talanchuk, V. A. Fedorov, I. R. Prigozhin, G. Haken, etc.), theories of fractals (V. E. Voitsekhovich, D. Zaupe, B. Mandelbrot, H.-O. Paytgen, V. V. Tarasenko, S. D. Haitun, H. Jurgen, etc.), the idea of noospheric (G. M. Komarnitsky, N. V. Maslova), health-creating (V. V. Kolbanov, A. G. Madzhuga, N. N. Malyarchuk, I. A. Sinitsina, G. Spencer, L. G. Tatarnikova, S. Frenet) and holistic education (Sh. A. Amonashvili, A.V. Voznyuk, L. S. Vygotsky, A. Maslow, J. Miller, M. Montessori, K. Robinson, I. Pestalozzi, Plato, K. Rogers, J. J. Rousseau, A. I. Subetto, F. Froebel, R. Steiner, etc.) [2; 6; 10; 13; 25; 28; 30; 32; 33; 344 35; 36; 37].

The study of the principles and mechanisms underlying the formation of fractal-holographic thinking of university students is associated with the construction of certain educational models that set the goals and scheme of post-non-classical education, which determine teaching and learning activities, control and reporting, and ways to evaluate the learning process [17]. As an educational model used in the framework of the formation of fractal-holographic thinking of students, the facilitation-resonance model is used, which contributes to the formation of nonlinear, fractal-holographic thinking of students and their formation as active constructors of their own life activity

The educational process based on this model is characterized by man-centered focus and provides the transition from diagnosis ways of

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personal choice to the diagnosis of its development, from adaptive-disciplinary models of knowledge acquisition and skills – to the birth of the world image in the joint activities of all participants of the educational process, from information cognitive pedagogy is to the semantic value of pedagogy, technology of education under the formula of "the unanswered question" – in life tasks and cognitive motivation of the listener, from the "trained helplessness" – to notsituation activity and putting the most important task, from training as an authoritarian monologue to the collaboration and assistance from the language of the administrative orders, to the language of "arrangements" and "recommendations" from the culture of usefulness – to the culture of dignity, salientia to man – centeredness.

The post-non-classical paradigm assumes setting a qualitatively new goal in the system of professional pedagogical education – to prepare a highly qualified teacher-creator, a person interested in self-change, who has a need for self-development and is able to create socially significant products of his own professional activity. Hence, the content of the preparation process changes. So a professional teacher does not broadcast innovative educational technologies, does not just introduce the student to the ideals of classical pedagogical science, he organizes an extremely important act of revealing the other significance of pedagogy in the mind of the subject. The future professional teacher chooses special elements of pedagogical science that are significant only for him, which are able to fit in and correspond to the value-semantic coordinates of his life world, become personally significant for him and find their place in it. The post-non-classical understanding of the world and man in the world is characterized by the growing reflection of scientists on the values and semantic contexts of human existence.

Post-non-classical science is characterized by the emergence of a type of scientific rationality that: combines the sciences of nature and the sciences of the spirit. In the modern scientific picture of the world, the former types of rationality do not deny each other, but distribute spheres of influence among themselves; depending on the research tasks, the same reality can be considered from different positions and can be the subject of development through different types of rationality; in these conditions, the cultural and value-semantic contexts with which the subject relates the known and understood reality become crucial.

Modern scientific research can be carried out with the help of post-non-classical methodological approaches [1; 5; 7; 14; 21; 24]. As

you know, post-non-classical science turns to the study of self-developing, open, non-equilibrium systems. The concept of self-organization of the system absorbs a "family" of other concepts: causality, goal-setting, Self-functioning, conditionality, etc.It absorbs in the sense that the new categorical apparatus reflects one-order system phenomena. None of them has a decisive ontological status that constantly determines the life of the system. Self-organization of the system occurs as a result of a radical restructuring of the hierarchical structure, and the method of restructuring is carried out each time according to an irreversible scenario. The description and explanation of this scenario each time correspond to the nature of the given moment and cannot be a complete impression of the studied reality.

In post-non-classical science, the system approach accumulates all other ways of studying reality, which, while losing their epistemological autonomy, do not lose their specificity. System analysis can be summative, complex, structural, functional, historical, logical, comparative, activity-based, depending on the set research goals. Scientific search reflects a certain moment of self-organization of a strong non-equilibrium system or a stage of evolution of global systems. Differences in the methodology of natural-scientific and humanitarian knowledge become minimal, and the previous installation on the hierarchy of general scientific and private scientific methods does not bring the desired result. In post-non-classical science, the system object is studied as an object of interdisciplinary knowledge, thereby allowing to reveal the truly scientific potential of modern pedagogical and psychological knowledge. Note that with each new stage of the evolutionary development of scientific knowledge, the existing assumed model of reality leaves an imprint on the nature of its description, which remains relevant only for a specific interval of explanation, and one of the striking examples of a common error in determining the methodological basis of a wide range of studies (in particular dissertation) is the leveling of these interpretation intervals.

In post-non-classical pedagogy, the oppositions "subject-object of study" and "subject-object of interaction"are no longer relevant. The studied reality is essentially not closed and is open to spontaneous environmental influences, thus allowing the use of variability in determining the logical status of education.

The post-non-classical scientific paradigm, viewed through the prism of modern cognition, is based on significant advantages, since as a glob-

al trend of science, it places the subjectivity and "human dimension" of scientific knowledge at the forefront, which is manifested in a close connection with such systemic components as: a complex of anthropological factors, the development of the social environment, interactive inter-subject communications, etc.

In the context of post-non-classical ideas about the world, thinking at the level of the holonomic mode of consciousness plays a decisive role. Wilber, S. Grof et al.). An example of thinking formed within the holonomic mode of human consciousness is fractal-holographic thinking, which acts as a result in post-non-classical education. To explain the essence of fractal-holographic thinking, let us turn to the interpretations of thinking available in the scientific literature. So, thinking is regarded as the highest level of human cognition, the process of reflection in the brain surrounding real world, based on two fundamentally different physiological mechanisms: education and continuous replenishment concepts, ideas and new judgment and reasoning [27].

Thinking allows you to gain knowledge about such objects, properties and relationships of the surrounding world that cannot be directly perceived with the help of the first signal system. Thus, thinking is defined as the mental process of interpreting what is perceived.

From the above definitions, it follows that thinking is a mental process, and not a natural given, therefore, this skill can be learned. And since thinking is a process of cognition, it includes not only established knowledge, but also the general ability of the individual to constantly replenish the sphere of thinking with new knowledge and the ability to see in volume.

From the perspective of the problem under consideration, the typology of thinking based on the ways and levels of thinking is of particular interest [29]. Within this typology, it is customary to distinguish between point thinking, linear thinking," planar "thinking," multi-level "thinking, three-dimensional or" three-dimensional "thinking," holographic " thinking, and multidimensional thinking. Here, we consider it appropriate to give a brief description of each of the presented types of thinking:

- point-based thinking-action-oriented here and now, thinking focused on" one-second " tasks. When a person in the process of solving mental problems does not take into account the consequences of their actions, especially the remote ones. In addition, it does not take into account parallel processes and their consequences ("I want-I take", "I interfere-I delete", etc.);

- linear thinking is close to the "stimulus-response" type, but it is possible to build chains, predict, it is described by the rules of formal logic. Linear thinking has its ontological basis in the objects of the manifested world. The conditional scheme of linear thinking consists in choosing a certain statement, one trend in the development of events, one belief or opinion, etc.; in unfolding the evidence in only one direction and then evaluating it. It is also possible to build chains and create events on the "domino" principle, when one event causes subsequent ones, and so on. At this level, patterns begin to form. Thus, linear thinking involves only one condition – the mental process, and most often it is the process of finding confirmation of one's thoughts, beliefs, points of view, and ideas. The product of linear thinking in relation to a particular subject is a set of individual aspects identified through analytical procedures, the establishment of spatial, temporal, causal and hierarchical relationships between them and the subsequent reconstruction of the subject with the inevitable loss of other aspects-undetected, hidden, potential or contrary to the reconstruction procedure. The main disadvantages of such thinking will be a constant defensive position; condemnation, accusation and, as a reverse side, a sense of guilt; inability to see opportunities, lack of dynamics, the presence of "cliches" or stable stereotypes that lead a person to ineffective solutions in previously experienced problem situations.

- "flat" thinking – when" lines " are tracked simultaneously, there are many of them, they can intertwine with each other. In the process of solving problems, they are taken into account, predicted and lined up, while it is possible to "weave" a pattern of event lines, taking into account the influence of "lines" (parallel processes) on each other. Here the "points of crystallization" of events and processes around work and here the system approach already begins. In this case, the patterns acquire the complexity of the drawing and their recognition, at this level of thinking increases.

- "multilevel" thinking, when the presence of different logical and organizational levels is taken into account, there is a "convergence of trajectories in a tangle". At this level, thinking is a systemic process, with the controlling and system-forming factor playing a decisive role. The construction of a hierarchical multi-level system of representation of objects, situations, actions and processes occurs simultaneously, both along the line of formation of aggregations (part-whole) and along the line of formation of generalizations (particular-general).

- hree-dimensional "volumetric" thinking, which takes into account the existence of different "layers" in reality, the existence of different "planes", meaning "field" (including paradigms), etc prevalent "systemic factor", the principles of synergy and self-organizing systems, the principles of fractality, and the laws of chaos. The product of three-dimensional thinking is the object as such, the object as totality with the inclusion of all possible aspects, including contradictory, and aspects of the background, and aspects of a fundamentally invisible environment. Conditional scheme of three-dimensional thinking: acceptance of different points of view as acceptable: understanding that everything has its own polarity and vision of any problem, any event from both one and the opposite side; lack of division into positive and negative and acceptance as neutral, in fact.

In our opinion, three-dimensional or" three-dimensional " thinking can be correlated with synergistic thinking. Synergetic thinking is non-dual, and is based on the interconnection, unity of all processes within yourself and in the world around you. A person with synergetic thinking perceives a separate fact or event in the continuity of a general process [16; 20]. Personal activity in the formation of one's self-consciousness and voluminous perception of reality consists, first of all, in overcoming the duality of thinking ("either this or that", as an expression of unambiguity, linear determinism); an awareness of community with the whole world is formed, the continuity of transitions in the ascent to wholeness ("both of them – in certain conditions").   Of course, the most important cognitive principle of synergetic thinking is the idea of the creative, constructive role of chaos in the evolution of complex systems. "This is both a way to reach relatively stable structures of evolution, and a mechanism for switching vital cycles of complex systems functioning, which connects parts into a single and steadily evolving whole, and a mechanism for adaptation to changing environmental conditions, including a way to update a complex organization in nature, society and the human mind" [16, p.103].

- "holographic" thinking (holo means "whole", graph - "write"). As Henri Bergson points out in his work "Creative Evolution", intelligence was created by evolution in the process of its movement; it is isolated from something more extensive, or rather, it is only a projection of reality, a projection necessarily flat, while reality has relief and depth. Therefore, holographic thinking is what gives relief and depth to the perceived information [4; 9; 19]. In this mindset, all events are intercon-

nected – one event contains information about everyone, and all events contain information about everyone. Holographic thinking differs from "three-dimensional" thinking by its holistic nature, mutual influence and interpenetration. This type of thinking is accessible to a few, and is characteristic of "energets", representatives of Eastern philosophical schools, people with extensive life experience, highly qualified specialists in various fields, writers, artists, directors, etc.

- multidimensional thinking, in which the presence and operation of different paradigms is possible. This is still the most accessible peak in this hierarchy of levels of thinking. Within the framework of this thinking, the depth of a person is determined by its "content", its "content", specific beliefs and values. In a broad sense, multidimensional thinking can be considered as a set of different ways of thinking, the dimension of which is greater than three. Numerically determining the dimensionality of thinking, it is necessary to take into account that an additional number of degrees of freedom (at least one) should be reserved for the work of consciousness, stimulating mental activity. In a narrow sense, multidimensional thinking should be understood as a specific way of thinking that corresponds to a higher ontological level, having a greater dimension. The main goal of multidimensional thinking is to penetrate to the essence of what is thought through the union of many meanings, both previously explicated and newly discovered in the course of multidimensional thinking acts. The emergence of new meanings of the conceivable is the result of the study of spontaneously formed correlations acquired by a multidimensional thinking subject as a result of intentional tension about the subject of thinking; multidimensional thinking is carried out by operating with concepts, while the concept is understood as an open set of meanings. Multidimensional thinking opens the way to the formation of new cognitive strategies that contribute to the elimination of cultural gaps resulting from cultural differentiation.

Discussion of the results

Semantic analysis of the terms "fractal" and" hologram" allowed us to define another type of thinking-fractal-holographic. Fractal-holographic thinking is a process of holistic reflection of the surrounding reality, during which there is no gradation into sensory, logical, bodily, intellectual and spiritual components in perception. As stated by R.Arnheim, truly productive thinking must take place in the perceptual domain. Therefore, the basic mechanism of fractal-holographic thinking can be

defined as the ability of a person to respond to a" perceptual challenge", which initiates quite complex and deep thoughts and feelings, which involves the use of a huge integrative potential of art.

From the perspective of the presented interpretation of fractal-holographic thinking, techniques and techniques that ensure its formation in students are of particular interest. They can be related: the technique of "Fractal image" (T. Z. Poluektova), the technique of "Thinking pattern" (V. A. Melnikov). In accordance with the theory of the organization of the world as a fractal structure, where any information is naturally repeated at various scale levels, in the technique of fractal drawing, the macrocosm is a person, and the microcosm is his drawing.

The technique of "Fractal drawing" was proposed at the end of the XX century [18]. The purpose of this technique is the actualization of the resource potential of the individual and the search for ways of its self-realization. Here, the principle of similarity (fractality) is applied initially, when a person draws his first drawing and, without realizing it, transmits his inner state. The drawing made in this way is directly related to the psychoemotional and physical state of a person, in addition, in this drawing you can find information about his childhood and youth, environment and relationships in the family.

Through this technique, there is an awareness of the energy-informational nature of a person. This technique allows you to identify his type of consciousness-rational or intuitive. The rational type belongs to the realm of intelligence, and its domain is our daily activities and the reality associated with them. The intuitive type is a completely sensory-intuitive perception of reality, it is all that is connected with the past, present and future intuitive and emotional experiences of a person that exist at the level of the subcortical structures of the brain. Depending on the set of determining factors in each person, either one or another type of consciousness prevails, but it is the ability to penetrate or at least hear the voice of one's intuitive that determines the quality of life and the level of self-realization of a person.

Within the framework of this technique, using the analysis of a person's color perception, it is possible to accurately determine his emotional and physical state. Through the perception and the connection between the fine motor skills of the person and his emotional and physical and mental conditions, through a consideration of rational and intuitive perception of man and his creative activity, is possible with high accuracy to carry out the diagnostic process the main features of the

nature and qualities of human personality. Targeted personal attitudes of consciousness and information from the deep levels of the subconscious allow us to achieve a multi-level disclosure of the psychoemotional state of the diagnosed person, identify hidden psychophysiological complexes and come to a common understanding of the human condition. The technological techniques used in the methodology, key features and criteria in the process of analyzing drawings allow everyone to independently diagnose and correct their condition, using the universal concepts of harmony and beauty. Thus, on the one hand, the technique of "Fractal drawing" can be used to diagnose the multidimensional manifestation of the mental and physical in a person, and on the other-to act as a means of revealing internal potentials, expanding the boundaries of ideas, cognition and thinking, emotional rapprochement with oneself (internal balance).

Along with the presented technique "Fractal drawing", which is more diagnostic and corrective in nature, it is necessary to refer to the methods of domestic scientists (V. A. Melnikov, E. E. Purik, etc.), which are aimed at forming the creative thinking of students through the use of artistic and plastic language of art [22]. Thus, the defining role in the method of "Thinking with a drawing" (V. A. Melnikov) is occupied by the problem of great imagery, the role of tonal relations in classical and modern art, the energy of tone, expressiveness, space, composition, universal laws of art, which together represent the artistic and plastic language of art.

As you know, creative thinking involves a mental (as opposed to craft) component of the drawing process and includes a number of aspects:

1. the ability to think compositionally, professionally master the tonal-plastic range, clearly identify the design of the form, subtly feel the proportions of the model, as well as making your own view of the world to create a bright artistic expressiveness of the image object through the actualization of the chain: representation-image-action-object;

2. the ability to convey the spatial and emotional-psychological characteristics of the subject;

3. understanding the relationship between the visual features of the subject and the ways it is depicted;

4. knowledge of the methods of applying the means and techniques of graphics to the tasks of creating an artistic image in painting and graphics; architectural and design design;

5. understanding the interdependence of the author's design and the nature of the graphic image.

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According to the method of "Thinking by drawing", teaching drawing is based on a consistent study of artistic means in accordance with the tasks of a particular type of artistic activity (ideally, different types of creativity, since variability gives a better understanding of the problems of art).

Teaching drawing to students of various fields – painters, graphic artists, architects, designers – begins with the image of a real form from nature, the development of the principles of its constructive construction, the development of technical and artistic techniques of image, the concepts of "line", "tone", "chiaroscuro", "color"

Drawing from nature (performing both long-term works and sketches, short-term sketches, sketches) is the initial stage of training, mastering it leads to the development of methods of working on memory and representation, the gradual formation of the ability to create images of objects and phenomena. At the same time, it is important for students to be able to solve compositional problems in drawing – from placing an image on paper to compositional constructions based on imagination, using various visual materials and techniques (pencil, pen, charcoal, sanguine, etc.).

The degree of awareness of the basic concepts of visual literacy in art education depends on the correct hierarchy of its interrelated positions (form, tone, volume, illumination), on the completeness of understanding of their content. One of the main problems in teaching drawing is the problem of developing a sense of tone in students, because the basis of both graphics and painting, i.e. the craft side of the leading art forms, is drawing – the art of recreating on the plane of three-dimensional space, objects of the real world by graphic (linear and tonal) means.

Drawing training is based on the development of artistic-figurative, spatial, compositional thinking of students, which is an important component of fractal-holographic thinking. Here, the shape is formed on the plane of the sheet due to the line (which has such characteristics as quality and quantity), the tone (its energy), the tonal achromatic organization of the plane (or the tonal-rhythmic basis of the composition). Line, stroke, spot create the energy of tone, emotional tension, the illusion of space, organizing the composition of the graphic sheet, creating a holographic model of the image of real reality.

In turn, the tonal achromatic series organizes the spatial environment not only of the graphic, but also of the pictorial work. It is no coincidence that the best of the paintings make a strong impression in black and white reproductions.

Tone is an essential quality of plastic drawing, allowing you to find an unexpected solution, unique in its kind, placing objects in space. The "energy of tone" creates an internal movement of form-forming elements, "loads" the volumes with figurative and rhythmic components, enhancing the expressive qualities of the work.

The integral achromatic tonal organization forms the hidden meaning of the form of the pictorial work. If we build a form by means of a linear-constructive drawing, we give clear information about what is depicted in the spatial environment (by means of composition – such as rhythm – proportion – scale) formed on the surface of the sheet. This is the foundation, a kind of matrix that allows you to methodically competently develop an understanding of the form in the process of learning to draw.

When solving these problems, it is necessary to be guided by a set of principles that reflect the regularities of the formation of fractal-holographic thinking of university students [18; 19]:

1. The principle of non-linearity allows for a multiplicity of development paths caused by the unpredictability of the result: the content of education, as a rule, does not correspond to the system of competencies of students and, both the process and the result, are rarely identical to the teacher's plan. The non-linearity of the system leaves the possibility of improvisation, moving away from rigid frameworks and regulated conditions, and promotes the development of creative approach and lateral thinking.

2. The principle of congruence states that the more congruent the sender of the message (teacher), the greater the probability of fulfillment (understanding) on the part of the recipient (student). If the teacher himself believes in the importance and necessity of studying this material, it will be easier for him to convince students of this. If the teacher is really passionate about their subject, they are more likely to inspire students to learn it.

3. The principle of openness, within the framework of which any pedagogical system should actively interact with representatives (teachers and students) of other levels of education, as well as with representatives of various professions for detailed and visual acquaintance with them.

4. The principle of fractal harmony asserts the idea of the need for holistic human development-emotional, aesthetic, intellectual, physical-as a system where each element is interconnected and interdepend-

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ent with each other. The greatest result in the learning process can be achieved if in the study of any section of subject knowledge, as many such generic and derived fractals as possible will be involved. For example, training using the "effect of immersion in the era" when, in different disciplines in parallel, studied history, literature, culture, and even sports activities a specific historical period; the performance of tasks with elements use of knowledge of various disciplines, independent research, theatre games and science experiments. In the context of this approach, it is promising to use elements of actualization of joint activities between students, thereby expanding the possibilities of the individual sphere of knowledge through the convergence of individual and group consciousness.

5. The principle of hierarchical knowledge. At the moment, the existing system of assessing students ' knowledge looks more like: "5" - "presented knowledge in accordance with the program", "4" – "did not reach the highest grade, but, in general, satisfactorily coped with the task", "3" – "demonstrated initial knowledge" (very often the grade "satisfactorily is set solely out of compassion), "2" – "showed complete incompetence". It is important to change the existing attitude to the point system in the assessment of knowledge, making it "five-point" in the full sense of the word, then we will see a different picture. The manifestation of complete incompetence in relation to the subject is supposed to be evaluated as "zero", " one " and " two " – this is also the level of knowledge of the material, albeit unsatisfactory. Mastery of subject minimum mandatory for each student, must comply with the "satisfactory" rating; a deeper level of knowledge of the material presented by the teacher (available in the mandatory training literature) is subject to the assessment "good"; focus on independent search of knowledge and creative approach to completing tasks, deserves "excellent". The creation of such a curriculum, which provides for the differentiation of hierarchical knowledge and a clear definition of the subject minimum, will allow students to independently choose the level of study of the material they need for further professional training. In this context, the point assessment of knowledge should reflect the level of training and depth of mastery of the subject of study, thereby acquiring an individual focus, and not be an indicator of the diligence or discipline of students.

6. The principle of otherness implies the formation of a sensitive attitude to the world around us, as opposed to focusing on the primary satisfaction of one's own needs, the ability to see and fill the need of another, the ability to sympathize, empathize and rejoice.

7. The principle of resonant interaction is necessary for the effectiveness of the educational process, since the teacher and the student must be "on the same sound wave" [14]. At the same time, the teacher's mandatory ability to transform complex objects of theoretical knowledge into the most understandable ones for a particular student, in terms of the level of his culture, thinking skills, and general ideas about the world around him, remains important.

8. The principle of holographic projection (A. S. Belkin) involves the process of multidimensional volumetric disclosure of the content of the studied knowledge, states that combine at least three projections with centric vectors: a) vitagennuyu-vitagennaya information of students, demanded by the teacher in the learning process to prepare for the presentation of new knowledge. Vector: student-knowledge-teacher; b) didactic – scientific information coming from the teacher using vitagenic information of students. Vector: teacher-knowledge-teaching; c) constructing-information coming from any additional source (vital experience of others, book, mass media, works of art, scientific data, meetings with specialists of various branches of science, etc.) and creating a complete holographic picture of knowledge. In the course of implementing this principle, the student becomes a full participant in the educational process, provided that education is based on his life experience, which is considered as an important source of learning. The student's own experience reflects his life position, the content that he learns is superimposed on his experience, combined with it. In this context, the vitagenic experience appears as the result of a serious analysis of events, their assessment [3].

9. The principle of information acceleration (I. P. Getmanov), which characterizes the features of coevolutionary development of complex open systems. From the position of this principle is seen from the information model of the future inherent in the educational reality as complex self-developing system, and its structural evolution as coevolution proceeds of all structural elements and management systems through the structuring order out of chaos, fluctuation of disturbances in the interaction result information to the multi-level system elements among themselves and with the external environment. Evolutionary structuring of the system is an increase in its information capacity. The principle of information acceleration demonstrates the logic of accelerating the pace of evolution: each subsequent stage of evolution is characterized by an increased information capacity of the system. Due to the law of

information acceleration in the system interaction "teacher-student", the intensity of information processes of resource exchange with the environment in the subsystem " student "is much higher than in the subsystem"teacher". Compliance with the principle of information acceleration implies the construction of an educational space taking into account its temporality: the teacher should not so much keep up with the intensively increasing information flow of information, as teach to receive this information independently, as it is relevant and in demand [8].

10. The principle of optimization of reflexive interaction – orientation to the optimal use of reflexive support and reflexive support of educational and cognitive activities of students in individual and group forms of training. This principle is based on the ability of a highly organized system to evaluate itself, thereby allowing you to find the most optimal ways to develop and expand learning patterns.

11. The principle of holism is aimed at considering a person as an integral being, a component of the system "personality-environment", consisting of a set of mutually conditioned and mutually agreed structures. At the same time, the biomorphological structure of the human body and its psycho-emotional component should be organically inscribed in its social existence.

12. The principle of the self. The self (German selbst – "I", self – identity) - in the analytical psychology of C. G. Jung, acts as an archetype of order, the center of the integrity of human potential, integrating all human mental processes, conscious and unconscious, and acting as the principle of their unification [31]. The" self " of a person is expressed in the ability of a person to internalize and assimilate in a creative and universal form the socio-cultural experience that is the basis of his self-realization in society. This experience allows you to preserve the unique, original, self-sufficient features of a person, revealing his boundless possibilities and openness to various kinds of changes; to realize yourself as some immanent identity that preserves your own "I", supporting and self-adjusting the structure of the personality in any conditions. Thus, the human self is an organized, connected whole, which includes in its context a continuous process of awareness, reflection and is constantly in development as social reality changes. This leads to an understanding of the existence of a polyphonic self, which, unlike other types of self, where the dominant monological feature of world perception is seen, is realized at the point of contact with different-order self-images. In

the psychological analysis of the personality, to reflect its psychological connections and relations with the surrounding reality, plays a decisive role polyphonic self, which is seen as a way of existence of man, combining in the process of life is complex and sometimes contradictory samotnie images, but the United man into a complete experience, ensuring their harmony and according to their own unified whole [11;12]. The selection of the polyphonic type of self fully reflects the complexity and ambiguity of the position of a person in a modern, rapidly changing society, which contributes to the emergence of this type of self, a person who is able to react very quickly to the continuously transforming realities of time and not lose himself in this unstable existence, but be able to resist the impending chaos, provide self-organization, self-adjustment and feel himself as a whole.

13. The hologram principle of being system reflection is the mutual reflection of the deep and surface (in the same way as the rational and irrational ways of cognition) levels of reality description. It is important, however, that this principle is realized only under the condition of the unity of the world, when it forms a single whole, in which each element appears absolutely valuable and necessary for the whole, since the removal of a single element from the general architectonics of the whole leads to its destruction. At the same time, in the context of this principle, it is the person who appears as the initiator of reality, the world is initiated ("created") in the process of the act of contemplation (participation) of a person ("Observer") of the world.

All these principles characterize the orientation of the content of education to master the necessary volume and level of training in the chosen professional field, the development of self-education skills, self-organization of activities, self-development, independent solution of practical problems using a creative approach and the creation of trusting relationships in the dyad "teacher-student", based on mutual respect and technologies of educational and pedagogical cooperation.

The indicated provisions of the formation of fractal-holographic thinking of students contribute to the further development of the phenomenology of pedagogical education, and the quantitatively accumulated scientific and pedagogical potential in the conditions of differentiation and integration urgently requires its qualitative (theoretical) understanding. This circumstance is the most important condition for the emerging secondary integration of pedagogical knowledge and the implementation of the conceptual ideas of fractal pedagogy in the field

of education. The study of fractal pedagogy involves the construction of certain educational models that set the goals and scheme of education, which determine the teaching and learning activities.

Changing the educational paradigm from the system "man-world" to "man-world - "I" of a person " implies a holistic development of the individual (emotional, aesthetic, creative, physical), ensuring a more complete development of human capabilities in all areas of his life. Thus, changes in modern education are based on the imperatives of a comprehensive, universal, holistic, harmonious development of the individual; the transition from a one-dimensional to a multidimensional person. At the same time, the humanistic potential of art education becomes an important factor in the development of a person in the conditions of the dominance of rationality (technologism, practicality, etc.) and the displacement of his sensory-emotional and moral potential.

The factor of holism (integrity) currently finds its realization in the phenomenon of postmodern thinking aimed at achieving a holistic reflection of reality, implemented by overcoming the principle of asymmetry of categorical oppositions, which involve considering the world through the prism of asymmetric principles, when in each particular case preference is given to one of their two paired (asymmetric) positions, such as, for example, "material – ideal", "determinism-indeterminism", "objective-subjective" , etc.

The desire of postmodern consciousness to overcome these dichotomies is realized in its interest in the study of "uncertainties", "dualities", "complementarities", etc. In this regard, the appeal to art to solve the educational problems of our time is important and timely.

Conclusion

In our opinion, it is the appeal to the artistic and plastic language of art as a means of forming fractal-holographic thinking of students that acts as a fundamental basis for solving educational problems of fractal pedagogy. Fractal-holographic thinking is a process of holistic reflection of the surrounding reality, during which there is no gradation into sensory, logical, bodily, intellectual and spiritual components in perception. The basic mechanism of fractal-holographic thinking can be defined as the ability of a person to respond to a" perceptual challenge", which initiates quite complex and deep thoughts and feelings, which involves the use of a huge integrative potential of art. In the context of the presented interpretation of fractal-holographic thinking, techniques

and techniques that ensure its formation in students are of particular interest. They can be related: the technique of "Fractal image" (T. Z. Poluektova), the technique of "Thinking pattern" (V. A. Melnikov). In accordance with the theory of the organization of the world as a fractal structure, where any information is naturally repeated at various scale levels, in the technique of fractal drawing, the macrocosm is a person, and the microcosm is his drawin.

In the process of formation of the fractal-holographic thinking of students in the context of post-non-classical education, a decisive role is played by a set of principles: the principle of linearity, the principle of congruence, the principle of openness, the principle of fractal harmony, the principle of hierarchical knowledge, the principle of drugadministration, a principle of resonant interaction, the principle of holographic projection, the principle of information acceleration, the optimization principle of reflexive interaction, the principle of holism, the principle of the self, the holographic principle being a systematic reflection. Thus, the formation of fractal-holographic thinking in the process of implementing the concept of post-non-classical education contributes to the development of the student's personality in a multidimensional and multidimensional aspect, allowing not only to effectively adapt to the changing conditions of social, biological, digital and informational life, but also to act as a "creator" of one's own being.

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Psychological determinants of gender tolerance at the senior teenagers in the multicultural educational space

Abstract. The article presents a theoretical analysis of the problem of gender tolerance of older adolescents in a multicultural educational space. The authors consider theoretical approaches to the study of tolerance, reveal the essence of the concepts "tolerance", "sociocultural tolerance", "gender", "gender". The study clarifies the definition of the concept of "gender tolerance", characterizes its structural components and correlations between gender-role characteristics and the level of socio-cultural tolerance. The methodological basis of the research is gender and vector-contextual approaches. The authors pay special attention to the characteristics of psychological determinants that influence the formation of gender tolerance of adolescents in the multicultural educational space. In the course of an empirical study, the structure of gender tolerance of adolescents is determined, its role in the socio-cultural adaptation of the individual is shown. The results of the research will contribute to the formation of positive interpersonal relations in the process of gender interaction, optimize the process of forming gender tolerance of adolescents in a multi-ethnic environment, develop strategies of behavior and activities aimed at the value attitude of students to the attributes of gender culture.

Keywords: tolerance, sociocultural tolerance, gender, older adolescents, educational space, gender approach, vector-contextual approach, gender studies, gender tolerance.

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Introduction

In modern Russia, the environment of the educational space is represented by a variety of genders, ethnic groups, faiths, and social strata, which can serve as the basis for conflicts and disagreements between their representatives. In this regard, the task of forming tolerant personality qualities as a guarantor of productive interaction of all participants in the educational process is of particular value. The issue of the formation of gender tolerance in the educational environment is particularly relevant, since in the modern world, gender roles are being transformed, and new forms of inter-gender interaction are emerging.

In this context, the creation of social and pedagogical conditions for the successful formation of tolerant personality traits is a priority task not only for educational and educational organizations, but also for the state as a whole. This fact is confirmed by such normative documents as the "universal Declaration of human rights" (1948), "international Covenant on civil and political rights" (1976), "Declaration of principles of tolerance" (1995), Decree of the President of the Russian Federation from 12.05.2009 N 537 (ed. from 01.07.2014) "On the national security Strategy of the Russian Federation until 2020".

Federal targeted programs have been developed as part of our country's state policy: "Formation of attitudes of tolerant consciousness and prevention of extremism in Russian society" for 2001-2005, "Prevention of terrorism and extremism in the Republic of Bashkortostan" for 2011-2013," Harmonization of intercultural, interethnic and interfaith relations, education of a culture of tolerance " for 2010-2015.

Theoretical analysis of the literature on the problem of research allows us to assert that the phenomenology of tolerance is discussed in the works of domestic and foreign philosophers, sociologists, psychologists, and political scientists [1, 5, 33, 43, 6, 10]. A number of researchers [11, 20, 37] focus on the problem of forming tolerance by methods of folk culture and creativity in different age periods.

Others consider ethnolinguistic tolerance in the intercultural dialogue, methodological aspects of the analysis of the formation of a tolerant social environment in multicultural societies, tolerance as a universal value, carry out a gender analysis of the ratio of values and attitudes of political tolerance in the subculture of University students [3, 38, 40, 41, 13]. Separate studies are devoted to the issues of gender tolerance as a factor of stability of social relationships [8, 9] in her research reveals the specifics of the conditions for the formation of tolerant attitudes of public consciousness and behavior of groups in Russian society.

Due to the lack of theoretical development of the problem, the study of gender characteristics of adolescents in the aspect of multicultural environment seems to us very relevant. Considering the multicultural educational space as a social environment, we can focus on gender tolerance as a personality quality necessary for the harmonious and productive interaction of representatives of the two sexes, a factor that must be taken into account when organizing educational work aimed at the formation of tolerant personality traits at various educational levels.

Methodology and research methods

The methodological basis of the research is gender and vector-contextual approach. The gender approach is a set of concepts that consider differences in the perception, self-perception and behavior of women and men, deducing them not from innate anatomical and physiological features, but from education on the basis of cultural representations of the essence of women and men. The gender approach assumes that gender as a certain social role is created (constructed) by society and determines the position and behavior of a person in society (family, political structure, economy, culture and education, etc.).

It is based on so-called "gender studies" that reveal the influence of gender on various forms of culture, including social relations, scientific theories, works of art, etc. In particular, it is emphasized that gender roles in society are not initially equal, and in the vast majority of cases, men dominate the culture. Some researchers and politicians conclude from this that gender roles need to be reviewed in order to increase the role of women in society (the feminist movement), which should also apply to education.

Accordingly, the gender approach in education means considering the theory and practice of education as a process of forming a gender identity in students. In this process, it is necessary to avoid the extremes of gender identity mixing that the West is following (first of all, the countries of Western Europe). Education should help the emerging person to realize the uniqueness and complementarity of gender roles in life and in social relations, to form respect for specific male and female ways of perception and creativity, the ability to exist harmoniously in their gender role and with people of other gender (including those who have deviations in the formation of gender identity).

The vector-contextual approach (A. A. Verbitsky, A. G. Madzhuga, I. A. Sinitsina, V. A. Yasvin, etc.) is an integrative approach that establish-

es the relationship between the phenomena of "vector", which shows the direction of force action, and "context", which localizes events or processes in space and time. In this approach, development is determined by the interaction of the environment, numerous social, psychological and historical factors. The category "vector" here acts as an element of the psychological space of the individual, which has a direction and dichotomous manifestations – growth or destruction.

The following principles are used for implementing the vector-contextual approach:

- the principle of psychological and pedagogical support for personal and semantic inclusion of the subject in various educational and cross-cultural contexts-involves the mobilization of the entire potential of the student's activity – from the level of perception to the level of thinking, actions and actions to make individual and / or joint decisions focused on its value-semantic sphere;

- the principle of the leading role of joint activity, interpersonal interaction and dialogical communication of subjects of the educational process-aimed at developing not only mental, but primarily business and socio-moral qualities, improving human relations, preserving the internal integrity of a person. The basis for the introduction of this principle in the theory of contextual learning was the fundamental position of L. S. Vygotsky that any higher mental function develops in a person through the appropriation of culture, represented in a symbolic form, through communication and dialogue with other people [42];

- the principle of contextual cognition-is expressed in the formation of contextual conditions, which reveal patterns, hidden, internal connections and relationships that contribute to the development and self-development of a person who is able to create their own personal space, a favorable environment.

- the principle of the possibility of knowing the inner world of the individual-involves the inclusion in the process of training, education and development of the individual psychological and pedagogical tools aimed at self-knowledge, actualization of personal resources and assessment of students ' actions and actions in situations of alternative choice, the readiness of the individual to self-determination;

- the principle of vector modeling involves the construction of a coordinate system that takes into account the main components-vectors that characterize the phenomenon under study, as well as contexts and levels of self-identification that allow determining the direction of the main components-vectors;

- the principle of indirect influence – a person forms certain ideological (social) ideas, views, beliefs, independent research behavior that simultaneously cause positive or negative emotions, feelings, and changes in motivation;

- the principle of holism focuses on the holistic study and training of personality (emotional, aesthetic, creative, physical, etc.); – provides freedom of choice of educational content to meet the educational, spiritual, cultural and life needs of the person, humane treatment of the developing person, the development of her individuality and autonomy in cultural and educational space;

- the principle of health creation and cultural creation – involves the actualization of human intrapersonal resources, the formation of adequate psychosensory capabilities of subjects of the educational process and strategies for their behavior and activities in accordance with socio-cultural contexts and various forms of attitude to their health. In this context, culture is able to discover and objectify its internal, virtually real content, its potential, and thus ensure the self-disintegration of society;

- the principle of virtual merging-involves combining ontologically independent levels of self-identification, taking into account the context in which a particular process is carried out, integrating various contexts and creating a single contextual field, where the actual human existence is not subjected to deformation.

Thus, the vector-contextual approach establishes a relationship between the phenomena "vector" and "context" and provides conditions for the emergence of an open reflexive Dialogic space in the educational environment.

The study was organized by the Department of psychological-pedagogical education of the Sterlitamak branch of Bashkir state University and the Department of pedagogy and medical psychology, First state medical University named after I. M. Sechenov.

In order to identify the structure of gender tolerance, we organized an empirical study that took place on the basis of the Municipal budget educational institution "Secondary school No. 31", the Municipal budget educational institution "Secondary school No. 29". The study involved 145 8th grade students aged 14-15 years.

The following methods were used to diagnose the severity of gender role characteristics and the level of sociocultural tolerance: the questionnaire "tolerance Index" developed By G. U. Soldatova, O. A. Kravtso-

va, O. E. Khukhlaeva., L. A. Shaigerova [29] to determine the level of socio-cultural tolerance; the method "Masculinity-femininity" by S. BEM to identify psychological gender and determine the degree of masculinity, femininity and androgyny in subjects.

Results

To identify the essence and structure of "gender tolerance", it is advisable to consider the definition of the concept of "tolerance". According to the definition given in the Declaration of principles of tolerance [7], tolerance means "respect, acceptance and correct understanding of the rich diversity of cultures of our world, our forms of expression and ways of expressing human individuality".

In the context of the philosophical Sciences, tolerance is a worldview life position "for", "against" principles, norms, beliefs, developed as a result of ethnic, spiritual experience of the individual. In most studies, tolerance is compared with the concept of "tolerance" [24]. Tolerance is considered by the authors as a quality that characterizes the attitude to the interests, beliefs, beliefs, habits, behavior of other people, a form of respect for another person, recognition of their right to their own beliefs [12].

From the point of view of social Sciences, tolerance as a social phenomenon is related to the methodological foundations of the theory of social action [28]. How action is defined by sociologists and the very concept of "tolerance" - the willingness to accept "others" as they are, and interact with them on the basis of understanding and consent. In the "Sociological encyclopedia", "tolerance" is interpreted as tolerance to someone else's lifestyle, behavior, customs, feelings, ideas, beliefs [26]. According to S. D. Bakulina, the problem of tolerance at the present stage of development of society is more relevant in the socio-cultural context than in the philosophical one, as a quality of moral characteristics of the individual and is a sign of reliability, confidence in their own positions, a sign of ideological belonging, understanding and coordination of diverse interests and points of view without applying pressure, mainly by methods of explanation and persuasion [2].

In the modern world, tolerance is considered as a universal value, as an active position in relation to another person. According to M. Walzer, tolerance as a generally accepted value implies: religious tolerance, recognition of the rights of other people to think differently, open attitude to others, enthusiastic, aesthetic approval of differences [43].

In the psychological aspect, this problem is manifested, first of all, in the study of the features of the development of self-consciousness of the individual, the system, the individual's ideas about himself, which determine not only the perception of other people, interaction with them, but also the degree of tolerance or intolerance towards their own and others. According to G. V. Bezyuleva and G. M. Shelamova, tolerance is an attitude, i.e. the ability of a person to perceive and comprehend the essence of an object and ways of interacting with it [5].

Taking into account the above, it can be argued that tolerance is a multi – faceted, multidimensional phenomenon that is associated with all spheres of social life of the individual and is the subject of study in many scientific fields, including philosophy, sociology and psychology.

Generalization and systematization of research in the field of tolerance has helped to identify a number of core areas in the subject field of this current problems of the third Millennium: tolerance and understanding problem [12]; socio-cultural tolerance and its essential characteristics [44]; tolerance as an object of sociological analysis [14]; condition assessment and methods of development of tolerance of students of regional University [25]; tolerance and social order in the context of globalization [16]; psychology and pedagogy of tolerance [17]; tolerance as a universal value of the XXI century [18]; tolerance of students in Russia [19]; formation of gender tolerance in children of senior preschool age in the process of play-dramatization [20]; tolerance in the context of pedagogical culture of a University teacher [21]; tolerance of the individual in modern socio-cultural conditions 22]; psychological conditions of development tolerant behavior of teachers [24]; age tolerance in Eastern and Western types of societies [27]; tolerance education in school children [31]; tolerant and intolerant personality in the context of psychodynamic and cognitive explanatory models [33]. However, despite the diverse nature of research in the field of the phenomenon of "tolerance" in the works of domestic and foreign scientists, so far, the problem of forming gender tolerance in a multicultural educational environment has not received proper attention, there are no special studies that actualize the issues of the structure of gender tolerance and psychological determinants that affect the formation of gender tolerance of students.

Before clarifying the definition of "gender tolerance", it is necessary to distinguish the terms: gender and gender. Gender is a system of biological properties that clearly contrast in different people, determined by genetic features of cell structure, reproductive functions, and ana-

tomical and physiological characteristics [33]. Gender, first of all, reflects the physiological, physical, and biological differences between men and women. Gender, unlike physiological gender, is not a biologically determined given, but a social construct anchored by self-awareness and self-identification. Biological gender does not always determine the mental and behavioral qualities of a person comparable to masculinity and femininity, but also depends on social factors (Stoller, 1968).

In the works of N. V. Kruglova, gender tolerance is understood as "an unbiased attitude to the other sex, the inadmissibility of a priori attributing to a person the shortcomings of the other sex, following stereotypical opinions, expressing superiority, and displaying gender discrimination" [23]. According to S. B. Fadeev gender tolerance is manifested in three areas of personal development: cognitive (lack of stereotypes of perception, assessment of conduct in situations of moral choice), emotional (stability of interests, a degree of empathy towards the opposite sex, the lack of selectivity in communication), and behavioral (self-direction, initiative, adequacy) [11]. E. A. Konyshev gives the following definition of gender tolerance: "integrative personal education, manifested in the adoption itself and the other as representative of a particular gender, the absence of bias in evaluation of its internal characteristics and behavior, the ability to establish subject-subject relations" [20].

Based on the theoretical analysis of the literature on the research problem, we have come to the conclusion that gender tolerance is a respectful, unbiased and unappreciative attitude to a representative of the other sex, his actions, views, beliefs and judgments in the context of his political, professional, ethnic and religious affiliation.

We assume that the structure of gender tolerance can be determined on two grounds: the degree of expression of signs of gender-role identification (androgyny, femininity and masculinity) and the level of socio-cultural tolerance.

I n our opinion, the above-mentioned structural components of gender tolerance act as psychological determinants that influence the effectiveness of the process of its formation in older adolescents.

To identify the relationship between the structural components of gender tolerance, a correlation analysis based on K. Pearson was used. Correlation analysis of empirical data showed that between the level of severity it signs and socio-cultural tolerance there is an inverse correlation relationship at p level of 0.01, i.e. the higher the level of severity it signs, the lower the level of sociocultural tolerance (figure).

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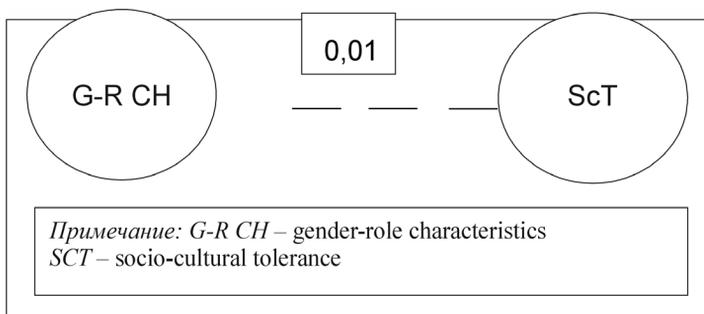
Fig.1 Correlation pleiad of gender-role characteristics and sociocultural tolerance

Based on the results obtained, it can be argued that the structure of gender tolerance is determined by the severity of gender-role characteristics and the level of socio-cultural tolerance. The study proved that adolescents with the most pronounced signs of masculine and feminine qualities have a lower level of sociocultural tolerance than adolescents with androgynous qualities. In our opinion, this is due to the fact that in the process of socialization and the formation of masculine and feminine qualities, the individual learns typically male or typically female behavioral patterns, which are later fixed in the form of gender stereotypes.

Gender stereotypes, in turn, are the basis for the perception of oneself and other people in the context of social interactions: mutual expectations of individuals regarding gender-appropriate behavior, attribution of social roles and statuses, traditional gender-role personality traits and socio-psychological characteristics. Such features of the gender structure of a person can serve as the basis for the emergence of inter-gender conflicts in a multicultural environment, so behavior that is inversely dependent on gender can cause a low level of socio-cultural tolerance.

Thus, tolerance is an integrative personal neoplasm, the formation of which is due to purposeful educational and educational activities. The variety of manifestations of tolerance causes its ambiguous interpretation in the context of different scientific approaches. Gender tolerance, studied in the aspect of multicultural environment, includes the following structural components: the degree of expression of gender-role

characteristics: femininity, masculinity, androgyny and the level of socio-cultural tolerance of the individual.

Taking into account the structure of gender tolerance, we believe that the fundamental principles of the formation of gender tolerance are: the establishment of partnerships with representatives of the other sex, based on mutual respect and cooperation; acceptance and understanding of the identity of another person; respect for their views, values, moral attitudes, sexual identity; recognition of gender equality, rejection of the ideology of sexism, ideas of superiority of one sex over another.

The novelty of the research is to identify the main structural elements of gender tolerance and establish their relationship.

The results of the study can be used in the preparation of a program for the formation of gender tolerance, which will optimize the processes of social interaction in a multicultural educational environment and determine the specifics of reflective and regulatory communication processes in older adolescents in the context of gender differences.

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Oksana Tatarinova

Project management that hinders the development of the gifted

Abstract. Substantial evidence supports the benefits of quality early childhood education for children of all levels and backgrounds. However, gifted education services for children are rarely provided in centers. Descriptive data were collected on two issues: barriers to the implementation of gifted education services and the potential benefits associated with the implementation of gifted education services. Qualitative analysis included ongoing comparative analysis to reduce data to support thematic findings. This study can help supporters of gifted education understand the needs of preschool centers seeking to expand their services to support the cognitive development of gifted children from diverse backgrounds.

Keywords: Early childhood; gifted; pre-kindergarten education; preschool.

Benefits of gifted education in preschool

Existing research suggests a number of benefits may be associated with gifted education in preschool (Sankar-DeLeeuw, 1999). School readiness, a goal shared by researchers, parents, and teachers alike, is one benefit of gifted education in preschool (Gormley, Phillips, & Gayer, 2008). Henderson and Ebner (1997) suggested that early childhood is a critical time for neurological development and intelligence. Accurate assessment of a preschooler's abilities can lead to the development of an educational program that best matches a child's learning ability and stimulates his or her development (Mills, 1992) [2]. Such an enriching learning environment for pre-schools who are gifted may make a dif-

ference in the emergence and future development of their academic talents (Damiani, 1997). This is especially true of children who come from disadvantaged backgrounds (Gallagher, 2007; Gottfried, Gottfried, Bathurst, &Guerin, 1994).Karnes and Johnson (1987) suggested that students in gifted preschool programs can develop the ability to persist at tasks, a willingness to take risks, higher-level thinking processes, the ability to engage in creative thinking, and the flexibility to work independently or in groups [1]. Early intervention also may address gifted underachievement before it has a chance to develop. For instance, early interventions may help children understand their academic talents and provide them a good foundation for future learning. Moreover, early interventions may afford them the necessary degree of challenge at a developmentally critical time (Cukierkorn, Karnes, Manning,Houston, & Besnoy, 2007;Whitmore,1986).Psychosocial development is another benefit of gifted education in preschool. For parents and educators, early intervention can lead to a better understanding of their children and students who are gifted, which should benefit all (Walsh, Hodge, Bowes, & Kemp, 2010). Mills (1992) suggested that gifted classrooms provide young children who are gifted the opportunity to interact with an appropriate peer group-other children who are of similar intellectual ability and chronological age [6]. Mills also suggested that gifted education in preschool facilitates confidence and self-esteem building, a positive attitude toward learning, and diminished feelings of frustration, alienation, and depression. Additionally, gifted enrichment opportunities in pre-school also may enhance character development, via a more active and engaging curriculum (Berkowitz & Hoppe, 2009). With a sense of community and a well-developed character, it is hoped that these children who are gifted may one day use their gifts and talents toward the betterment of society (Colangelo, Assouline, & Gross, 2004) [4].

Challenges to gifted education in preschool

In addition to the benefits of gifted education in preschool, the literature identifies a number of factors that inhibit the development of preschool services for children who are gifted. First, screening and identification is a fundamental challenge. The challenge begins with disagreement in defining giftedness (Walsh et al., 2010), which has historically presented a problem for the whole of gifted education, and preschool is no different. The use of standardized testing as a measure of a child's ability in preschool gifted program placement is also not without

controversy, given the unreliability of early childhood scores (Hodge & Kemp, 2000; Robinson 2000). Young children have more difficulty sustaining the required attention for standardized testing, can be easily distracted, may not understand the importance of the testing, and may simply vary greatly from day to day (Neisworth, 1993). Second, program development and evaluation can be difficult to execute and maintain [13]. Knowing the interests of preschoolers who are gifted and providing activities and materials that expand their interests are key to their enrichment (Foster, 1993; Mooij, 2013). Hanninen (1998) also suggests that the enrichment of preschoolers who are gifted should encourage higher-order thinking through the use of open-ended questions, advanced vocabulary, deductive reasoning, and creative thinking. To ensure that an effective program for preschoolers who are gifted is developed and maintained, the supervisor of the program should have some training in gifted education (Koopmans-Dayton & Feldhusen, 1987) [14]. Additionally, when evaluating the performance of the program and its students, the program director ought to establish a record system to monitor interventions and performances (Hanninen, 1998). This represents its own special challenge, as traditional methods of program evaluation, such as pre- and post testing and grading, often provide little additional insight beyond what was initially observed about the students (Mathews & Burns, 1992; Walsh, Kemp, Hodge, &Bowes, 2012). Third, and perhaps the biggest challenge to program development and maintenance, is the lack of public funding available for developing preschool gifted programs (Chamberlin, Buchanan, & Vercimak, 2007) [3]. This presents a challenge to staffing and training as, for a gifted preschool program to be successful, there must be a staff of competent teachers who are trained to work with children who are gifted (Barclay & Benelli, 1994). In addition to the pedagogical considerations of leading preschoolers who are gifted, the teachers also must have a working knowledge of developmentally appropriate assessment practices (Cukierkorn et al., 2007) [7]. To ensure that these requirements are met, preschool teachers may require ongoing professional development to support their preparedness to work with children who are gifted (Bondarchuk & Dovgan, 2013). Fourth, to address the needs of preschoolers who are gifted, a program must overcome the oppositional perspectives of its own teachers and administrators [12]. A common belief among educators (who have not received training in gifted education) is the idea that students who are gifted, by virtue of their giftedness, do not need special services –

that they are already ahead of the educational curve and will flourish regardless (Chamberlin, 2005) [8]. In contrast, another widely held belief, equally erroneous, is that a child's giftedness is only temporary, and that the child will inevitably regress to the mean in due time (Koshy & Robinson, 2006) [9]. Last, there is a concern among some educators that children who are gifted can be more difficult in the class-room.

Adopting gifted education services would provide educational and developmental benefits to gifted/advanced children

The most common benefit discussed by participants was the impact on the education and development of those students identified as gifted or potentially gifted. This theme included responses related to meeting the needs of gifted children and how gifted children can express themselves in preschool educational settings. Participants consistently expressed a commitment to the appropriate development of each child, including those who may be gifted or advanced. Participants described educational benefits as providing challenges to those children who need them [12]. Comments indicated that challenges are desirable for gifted children, but that existing programs are not difficult for those who demonstrate advanced cognitive development [8]. These points to the need for management, i.e., creating a curriculum that is more responsive to the needs of all students, including those who demonstrate more advanced cognitive development compared to the peer group [19]. One participant described the benefits of adding gifted education as, "A more diverse curriculum that meets the needs of all students is a better enrichment program." Another participant highlighted the curricular benefits of providing gifted education, "Benefits include a more rich curriculum that meets the needs of all students." Participants noted that providing gifted education services in the preschool will increase their ability to individualize dual learning to better meet children's needs. As one participant said, "More children will have their individual learning needs met." Another said, "We will be able to meet children where they are. Education and learning will be more focused." [16]. One participant said that adding services to teach gifted children is consistent with their approach to early childhood education, "It would be consistent with our teaching philosophy, which focuses on the individual child." [9]. Another interesting affirmation of this theme was the recurring idea that providing gifted education services would reduce boredom in preschool children [15], "It would definitely help gifted children and keep them from

getting bored while learning," Another participant said, "One benefit would be that their brains would be maximized at an early age, when they are most impressionable, thereby instilling a love of learning and possibly reducing boredom." [16].

Opportunities for subsequent research

Although there is enough empirical evidence for three meta-analyses of the effects of preschool on kindergarten, almost none of these studies look at the potential learning trajectories of students who come to preschool with high cognitive development and exceptional academic potential. Well-designed research is needed to examine the academic effects of modified learning activities for gifted and advanced children [18]. Another area that deserves more understanding is the teacher qualifications needed to work effectively with gifted students in preschool centers. The need for teacher training and more qualified staff dominates these findings. What models of professional learning can be effectively implemented for preschool teachers? What kinds of supports do these teachers need to initiate and sustain differentiated learning in preschools? Critical research documenting how some preschools have taken on the task of providing responsive learning environments for gifted students can be very helpful for preschool educators who want to expand their services to include learning for gifted children. Evidence suggests that preschool education has a positive impact on early childhood development, and additional evidence suggests that targeted interventions for gifted children are also beneficial [10]. This clarifies some of the perceived barriers and benefits associated with providing specialized services for young children who demonstrate high cognitive development [11].

The study of the current state and current trends in the management of childhood giftedness development, analysis of regulatory framework and scientific psychological and pedagogical literature, as well as our study and personal experience of management activities showed that the need to improve school management of childhood giftedness development is due to modernization of modern society involving its transition from an industrial to an informational, in which the processes of generation and distribution of knowledge becomes more important. In this regard, there is a need for people who are intellectually developed, talented, able to put forward ideas aimed at progressive changes in various areas of human activity [5]. Science and production can not exist

without the flow of new ideas, but it is extremely difficult to develop them intentionally [20]. The problem is solved only if a person is taught from an early age to manage creative activity. Increased attention to the problem of childhood giftedness development, in educational institutions in particular, associated with global dynamic changes in the life of our society and educational system, has put the problem of management of childhood giftedness development in the category of the most relevant [17].

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Snezhana Ushakova

Ilya Ushakov

Assessment of the readiness of Russian educational institutions to use digital diagnostic systems in psychological and pedagogical practice

Abstract. The article evaluates the practice of using digital diagnostic systems in the psychological and pedagogical practice of the practice of the autonomous educational institution "Gymnasium No. 57". The system of diagnostics in schools after the COVID-19 pandemic is analyzed, as well as the benefits and risks of using digital diagnostics systems by working teachers.

Keywords: digital transformation, digital education, digital diagnostic systems, digital diagnostic resources, distance education.

Diagnostics in the period after a pandemic

The world is changing exponentially with the advent of digital technology. There are not only the requirements for the training of school leavers of basic and secondary general education changed, but also for the training of future and working teachers and school psychologists [5]. One of the most important competencies of a teacher at present is the development and selection of diagnostic materials, their implementation and the ability to use these materials expediently.

According to Rosstat for 2018, there are 41,349 schools in Russia. Among these educational institutions, not every of them can boast of having the required level of digital literacy among employees, not to mention the idea of

Russians about new technologies and their opportunities in education. Today, on average, 35.4% of the population is optimally and above the level of knowledge of technologies such as digital platforms.

Digital readiness has a greater impact on digital transformation than technology itself.

The social context of society's functioning has changed since the COVID-19 pandemic. The educational system has undergone the greatest changes in this regard. The United Nations Educational, Scientific and Cultural Organization, the Organization for Economic Co-operation and Development and the World Bank, while monitoring changes in education in different countries in response to the pandemic, argue that students, teachers, parents and managers involved in transforming education, became victims of violations of the educational process and were forced to switch to distance learning [8]. These changes have led to an increase in the socio-economic inequality of students.

For some economic and technical reasons, most of the education systems were not ready for the transition to the distance format. Complications were a decrease in the motivation for performance due to the unacceptable format of the lessons and the environment not conducive to active mental activity, the problematic organization by the parents of a technically equipped workplace for the child at home, the difficulty of conducting extracurricular activities remotely, insufficient skills of teachers in working with children online. Stressful conditions increased the need to use digital diagnostic tools in the work of teachers, however, not every teacher was ready for the changes that occurred at the root, as a result of which diagnostics was practically not carried out.

The data obtained as a result of diagnostics is the most important material for the professional activity of a teacher. Diagnostics is a way of cognition, study and establishment of various relations, states, qualities and properties of research objects. This concept is widely represented in modern pedagogical science. However, in pedagogy, diagnostics has changed its content. So, if, for example, psychodiagnostics seeks to evaluate the personality and its individual aspects as relatively stable formations, then pedagogical diagnostics is aimed, first of all, at the results of the formation of the student's personality, the search for optimal ways to achieve these results and the characteristics of the integral pedagogical process. The similarity of all types of diagnostics is manifested in the target settings of diagnostic activity. Common to all types of diagnostics is recognition, collection of information about actually existing proper-

ties, characteristics, state of an object or examination process to assess the effectiveness of actions taken, as well as forecasting and making recommendations. It is also common that there is a norm with which the comparison is made. The difference is revealed in the comparison of objects and diagnostic items. Specific for pedagogical diagnostics is that it helps to optimize pedagogical activity and make it the most effective. Common to all types of diagnostics is the systemic perception of the object, its study and description. The use of digital resources in the work of a school psychologist and teacher in order to diagnose students can significantly simplify the structuring and interpretation of the data obtained, reduce the time spent on diagnostics, enable all participants in the process to take part in the diagnosis from anywhere in the world and increase students' interest in the process of completing assignments or filling out questionnaires.

Advantages and risks of using digital diagnostic systems in pedagogical and psychological practice

Objectively speaking, digital learning today can hardly be called a definite and developed aspect [5]. It is rather problematic to predict positive or negative dynamics in this direction. However, weighing all the pros and cons, we can assume that with the help of digital diagnostic systems in pedagogical and psychological practice, education is definitely reaching a new qualitative level.

The positive aspects of using digital diagnostic systems include:

1) The clarity of the materials provided and the publicity of information at any point with access to the Internet;

2) Convenience in obtaining diagnostic materials, the ability to answer a question in one click;

3) The independence of the student from the pace of filling in the data by peers, the ability to choose a comfortable secluded environment;

4) Interactive, versatile, flexible nature of the processed information;

5) The ability to obtain diagnostic results immediately after completing tasks;

6) The ability to independently regulate the time for passing diagnostics;

In contrast to the above, we list a number of reasons why the choice of digital tools for diagnostics among students is ambiguous:

1) Lack of the perceptual side of communication between the teacher and the student;

2) Lack of methodological support for the student's activities;

3) Not always the correct choice of teachers of digital resources for diagnostics, inexperience;

4) Deficiency of verbal communication, leading to the inability of the student at times to express emotions and thoughts;

5) Inability of the teacher to see non-verbal signals in the behavior of the student;

6) Lack of formation of media competence;

7) It is impossible to track and adjust the space in which the child is during the diagnosis;

8) The information received is not always reliable and sincere;

9) Preparation for diagnostics may take longer than offline diagnostics.

Based on the listed advantages and risks, we come to the conclusion that it is impossible to carry out diagnostics exclusively in the online format; it is necessary to alternate the traditional approach with the innovative one.

Analysis of the digital resources used in the Russian school

In order to study the practice of using digital platforms for diagnosing students in the municipal autonomous educational institution "Gymnasium No. 57", on March 29-31, 2021, an online survey was conducted on the basis of the Google Forms platform, in which students of grades 7-11 took part (236 respondents aged 13 to 18).

According to the survey, 55.1% of students participated in online diagnostics conducted by a school psychologist, 44.1% say the opposite.
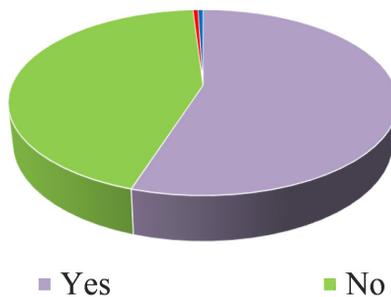
Fig. 1 Percentage of students who participated in practice in online surveys conducted by the gymnasium

83.8% of students claim that all surveys were conducted on the basis of the Google Forms platform, other students also identified digital platforms Simpoll, Yandex.View, Microsoft Excel Online with file sharing.

Most of the students received data on the results of diagnostics online, while 29% of those surveyed claim that they did not learn about the results at all.
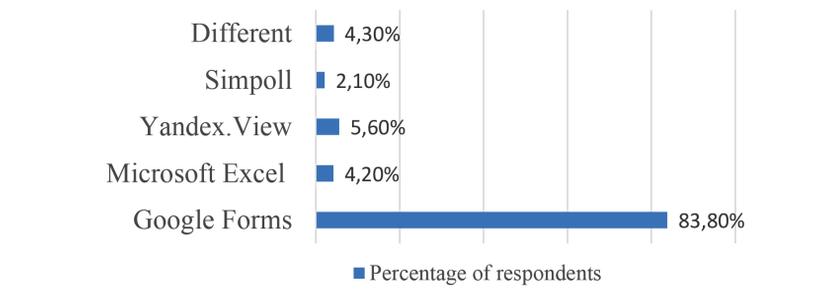
Fig. 2 Studying the level of awareness of students with digital platforms with the possibility of conducting diagnostic studies
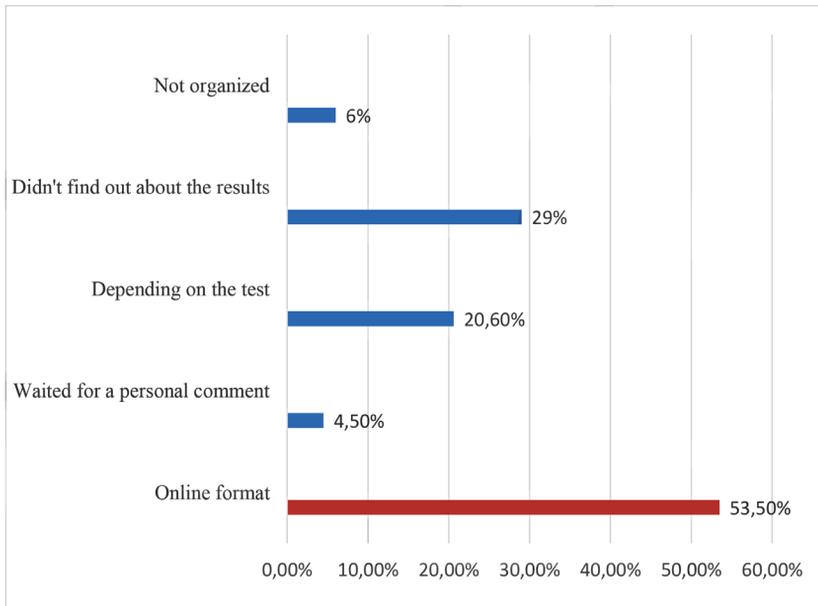
Fig. 3 Research on presentation of research results to students

When asked about the need to use online diagnostics in diagnostic practice, 177 respondents preferred to choose a combined diagnostic format.

■ Yes, all surveys / tests are required conduct online

■ Yes, some of the polls followed to organize online

■ Not necessary
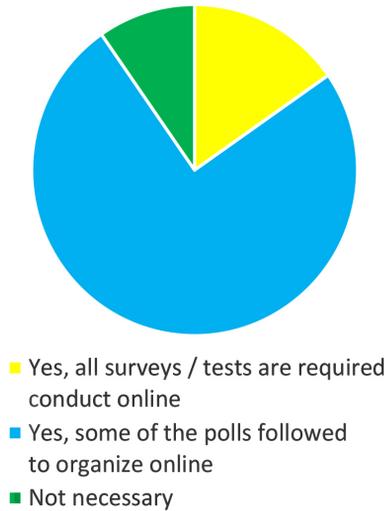
Fig. 4 Percentage of respondents choosing to conduct online diagnostics

From the above, the author comes to the following conclusions:

1) In the studied educational institution, digital technologies are practically not used for the purpose of diagnostics;

2) Students are practically not familiar with existing digital platforms with the possibility of diagnostics;

3) The respondents showed interest in taking online surveys, but prefer to take only a part of them in the online format;

4) "Gymnasium No. 57" is in dire need of the introduction of new diagnostic systems in the psychological and pedagogical practice of employees;

5) For a better analysis, it is necessary to interview current school psychologists and teachers of other schools for awareness of the possibilities of using digital resources in their professional activities.

The study and application of new educational opportunities in order to diagnose students can change for the better many aspects of the work of the school team, but their implementation should be phased, logical and structured.

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Chapter 5

Modern trends in psychotherapy

Irene Sibgatullina-Denis

Irina Nurgatina

Anthroposophische Untersuchung verschiedener Farbwerte in pädagogische und psychologiesche Praxis

„Sehr lange konnte ich mir das deutsche Wort „gelb" nicht einprägen. Eine österreichische Freundin von mir hat mir geholfen, die Welt des Gelben zu entdecken. Sie machte das ebenso sorgfältig, wie auch mein Vater es einst gemacht hatte..."

Autorin

„...nimm die weiße Farbe, denn das ist der Anfang, dann nimm die Gelbe, denn alles reift, und dann die Graue, damit der Herbst Blei in den Himmel spritzt, und nimm die schwarze Farbe, denn der Anfang hat ja ein Ende. Sei großzügiger mit Lila, lach und weine, und nimm dann die blaue Farbe, damit der Abend einem Vogel gleich auf der Handfläche landet, nimm die rote Farbe, damit die Flamme auflodert, und nimm dann die grüne Farbe, um Zweige in das rote Feuer hinzu zuwerfen."

Bulat Okudzhawa

Mir fallen die Worte meines Vaters ein, der sagte: „Farbe ist kein Licht, von dem es möglichst viel geben sollte. Die Farbe ist eine Meinung, eine Funktion, eine Menge von Variablen». Mein Vater hat die gelbe Farbe gemocht. Gelb? Wie lang ist seine Welle? Gelb maskiert den Schmutz, es ödet nicht an, es ist weder kalt noch heiß. Die Farbe gelb verfeinert die Wahrnehmung von Farbtönen, macht diese tiefer und raffinierter. Sie lässt uns dem Spiel der Farbtöne eine selbständige Bedeutung zuschreiben. Sie entwickelt unsere Beobachtungsgabe und Einbildungskraft. Sie hat eine kulturelle, historische und geistige Bedeutung. Sie beeinflusst das Physische und das Psychische.

Johann Wolfgang von Goethe hat einst geschrieben, dass die Farbe gelb auf die Seele wirkt, dass sie Gefühle hervorrufen und Emotionen und Gedanken aufwachen lassen kann...

Die eintönige Komposition des Gelben kennt kein chromatisches Intervall. Psychologisch ist diese Farbe auch in der Seele: gleichmäßig, prachtvoll, romantisch, ressourcenhaltig, entschlüsselt, aber eifersüchtig und verhängnisvoll.

Historisch wurde die gelbe Farbe zuerst als ein einfaches Mittel zum Verbinden von Objekten und erst später als ein Zeichen, ein Symbol, als ein System eines sprachlichen, eines psychologischen Charakters, als Begleitmittel der Psychotherapie verwendet.

Die symbolische Bedeutung des Gelben kann man kaum begreifen, ohne die Geschichte der Kultur und der Wissenschaft zu analysieren. Gehen wir darauf näher ein.

In der Kultur löst die Ausdruckskraft des Gelben eine Vorstellung aus, und die nachhängende Vorstellung von der Farbe lenkt die Gefühle in eine bestimmte (logische oder nicht logische) Richtung. Aber psychologisch ist die Farbe gelb uns immer nah.

Gelb ist eine natürliche Farbe. Ihre Charakteristiken bekommen mit der Zeit eine feste Bedeutung von Assoziationen. Und wieder bringt uns die Farbe gelb näher zu sich - vor dem Hintergrund des schweren Schwarzen, des fernen Blauen, des kalten hellblauen oder des warmen Roten.

Aber wollen wir die Realität des Lebens nicht mit der Realität der Kunst, und die Realität historischer Befunde und der Kultursymbolik nicht mit der Farbbegleitung der Psychotherapie verwechseln. Die Unterschiede kommen dort zum Vorschein, wo die verborgenen logischen Kodeinterpretationen und die psychologische Informativität dominieren.

In der „Resonanten Cokreation" sind zwei Faktoren von entscheidender Bedeutung:

Erstens: die Fähigkeit des Gelben, keine Kombinationen mit anderen Farben zu bilden, also seine Selbstgenügsamkeit;

Zweitens: Kommunikationen des Gelben, seine Fähigkeit zu Beziehungen auf der Ebene von Zeichen. Starker oder schwacher Kontrast des Gelben zu anderen Farben – das ist die Psychologie der Gegenüberstellung und/oder die Psychologie der Harmonie.

Symbolische Bedeutung der Farbe gelb

Das Symbol ist ein vereinbartes Zeichen, welches etwas anderes bedeutet, als es ist. Die Farbe ist immer mit bestimmten festen Eigenschaften des Menschen und der Natur verbunden und eignet sich somit bestens zur Schaffung von allgemein anerkannten Symbolen.

Die symbolische Bedeutung der Farben drückt sich also in jenen Erkenntnisfunktionen aus, die direkt auf das Objekt hinweisen und zusätzliche Informationen zu seinem psychologischen Wesen liefern. Schon in den früheren Stadien der Menschheitsentwicklung hat die gelbe Farbe eine symbolische Bedeutung bekommen:

- ie symbolisierte Licht (für österreichische Stämme);

- in der Knotenschrift der Inken „Kipu" symbolisierte die gelbe Farbe der Schnüre Gold;

- in der Zeichensprache der Indianer symbolisierte die gelbe Farbe Freude;

- im alten Ägypten symbolisierte Gelb den Gott Rah und die Wüste.

Eine besondere Bedeutung hatte diese Farbe im Orient: im alten China symbolisierte sie die Erde, das Zentrum des Weltalls, den Staat, die Jahreszeiten, den Planeten Saturn, die Musiknote Tschzhi, das Früchtetragende und Süße;

Im Tibet pflegte man mit Farben „die Gebieter der Erde" auszuzeichnen, man orientierte die Farben nach Himmelsrichtungen und bezeichnete die Tiere. Der gelbe Affe war im Mittelpunkt des Kreises, und der gelbe Ochse im „Süden". Die Farbe gelb symbolisierte auch die Hauptgöttin, die Hüterin der Erde, und auch die Herbstgöttin wurde in gelben Farben auf einem grünen Elefanten sitzend dargestellt.

Die japanische Kultur wurde stark von der altchinesischen Philosophie beeinflusst. Die Farbsymbolik spielt im japanischen Theater eine besondere Rolle, aber die Farbe gelb wurde oft vollkommen ausgeschlossen.

In der Symbolik der indischen Brahmanas wurde Gelb durch zitronen- und safrangelbe Farben sowie den Goldglanz ersetzt. In den Farbsymbolen der indischen Völker gehörte die Farbe gelb nicht zu den vorherrschenden, aber mystisch wurde sie mit dem Hauptgott personifiziert: der, „der einzig ist und selbst Farben schafft", wurde mit Blendendgelb symbolisiert. Unter den vielen Farben, die andere, zweitrangige Götter symbolisierten, wie etwa den Gott Pudra oder die Göttin Kali, war Gelb nicht anzutreffen. Der Bart und das Haar des Gottes Purush dagegen wurden immer in strahlenden goldenen Farben dargestellt.

Als sehr interessant erwies sich auch die Analyse der islamischen Farbsymbolik. Es sei erwähnt, dass in den islamischen Dogmen das Licht nicht mehr mit dem Bild des Schöpfers verbunden wurde. Die Farbe gelb war nicht absoluter Heiligenschein des Gottes, sondern ein optisches Naturphänomen. Deshalb wird das Licht im Islam mit der Sonne, mit dem Stern, mit dem Morgen und dem Mondsichel verbunden. An dieser Stelle wäre auch extra zu betonen, dass die Finsternis im Islam nicht dem Licht gegenübergestellt, sondern in einen ursächlichen Zusammenhang mit ihm gebracht wird. Die Finsternis ist die Bekleidung der Nacht, und der Schatten ist eine Schöpfung der Sonne. Im Rahmen unserer psychotherapeutischer Praxis in einem Subjekt der Russischen Föderation, dessen Kulturpolitik die Verschmelzung von Ost und West ist, begegneten wir einer ausschließlich auf den ethnokulturellen Traditionen und dem darstellenden Symbolismus aufbauenden Wahrnehmung der Farben. Hauptsächlich ist das mit den für den Orient üblichen Deutungen der Unvergänglichkeit, der Freude, der Goldfarbigkeit der Seele verbunden. Wir haben begriffen, dass im Islam die Farbe Gelb nicht nur eine begriffliche, sondern auch eine metaphorische Bedeutung hat.

Viele von unseren Patienten, die Islam bekennen, reagierten besonders expressiv auf die Farbe gelb. Ihre psychologischen Assoziationen bauten auf der Harmonie des Gelben mit dem Grünen (der Farbe des muslimischen Paradieses), dem Türkisblauen und anderen Farben auf, der Harmonie der musikalischen Akkorde ähnlich. Das Gleiche war zu beobachten, als diese Patienten im psychotherapeutischen Prozess nach neuen Interpretationen der Bilder von Stefanie Grüssl, der österreichischen Malerin, suchten. Einer von den Katalogen dieser Malerin ist gelb (während die anderen blau, rot und hellblau sind), und gerade deshalb erregte er besondere Aufmerksamkeit der Patienten. Die Muslime blätterten lange im Katalog, um ein künstlerisches Bild der eige-

nen „psychologischen Geschichte" zu finden und es mit dem Licht der Hoffnung auf einen endgültigen, positiven „Ausgang" aus der eigenen Situation zu verbinden.

In dieser Auswahl der Werke von Grüssl dominierte die Farbe gelb. Und gerade in diesen Farbtonalitäten schlugen die Patienten eine neue, eine Dur- oder Molldeutung und Kommentar dessen vor, was sie zum Psychotherapeuten kommen ließ. Unsere Dialoge waren oft gelb „gefärbt", aber von unterschiedlicher Spannung und Intensität, manchmal waren sie auch wortkarg oder halbtönig. Die «Besonntheit» dieser psychologischen Geschichten war derart vielfältig, dass nur der Patient selbst ihre Halbtöne, Halblaute und Halbstöhne identifizieren konnte. Seinen seelischen Zustand brachte der Patient durch die Auswahl der Bilder und deren Deutung zum Ausdruck.

Bemerkenswert ist auch die Erfahrung meiner Assistentin Gulmira Muratova. Auch sie beherrscht die Methode „Resonante Cokreation" und verwendet in der Arbeit mit Patienten ihre eigene Bilder. Sie malt von Kindheit an und hat eine künstlerische Ausbildung bekommen und auch einen Hochschulabschluss im Fach "Psychologie". Die Eigenart ihrer psychotherapeutischen Beratungen bilden die „Farbenmusikalität" und die Antwort der Patienten auf die emotionale Wirkung der Farben in Elmiras Bildern. Orientalische Motive sind auch hier zu spüren. Die Farbe gelb ist in ihren Bildern nicht die Hauptfarbe, trotzdem erregt gerade sie die Aufmerksamkeit. Die Reaktion auf die Farbe bringt den Patienten in Schwung und lässt ihn seine psychologische Geschichte erzählen. Viele von ihren Patienten suchen nach dem „Licht des Gelben" in Dialogen mit ihrer Psychotherapeutin und schließen sich einer anderen Quelle des Wesens der Psychologie an, welche sich von Traditionen des Orients stark unterscheidet.

Symbolische Bedeutung der Farbe gelb in der Kultur Jamaikas

2005 habe ich meinem Sohn bei der Suche nach dem Stoff für seine Hausarbeit geholfen. Er studierte damals an der Theaterfachschule in Kasan, heute ist er Student der Universität für Technologie und Design in Sankt-Petersburg. Wir befassten uns mit den Besonderheiten der symbolischen Bedeutung der Farbe gelb in der Kultur Jamaikas und machten eine Analyse vom Standpunkt der religiösen Bewegung Rastafari aus.

„Land der Quellen" - so nannten ihre karibische Insel die Indianer Arawak, die Urbewohner Jamaikas. Aber prinzipiell wichtig für die Ana-

lyse der Kulturgeschichte dieser Insel ist die Tatsache, dass die Kultur nicht auf dieser Insel selbst entstanden, sondern von Außen hin gebracht worden ist. Die Quellen sind also in den Gemeinden der flüchtigen Sklaven (Marunen) sowie in den Wiederauflebensideen Afrikas zu suchen. Diese Kultur bildet einen Teil der großen afrikanischen Kultur, die ihre Wurzeln in der jamaikischen Abart der in Äthiopien entstandenen Kultur und in der Religion der Rastafari hat. In dieser Kultur symbolisierte die Farbe gelb vier Elemente: das Holz, das Feuer, die Erde und das Metall. In der Kultur Jamaikas hat das System der Kultursymbole keinen vollwertigen „Klang" bekommen, aber die Symbolik des Gelben bildet eine Ausnahme. Die Farbe gelb wird vom Volk Jamaikas geachtet, sie versinnbildlicht die Sonne, die „zitronenfarbenen" Sterne, die gelben Gitarrensaiten, den Strahl des Pfeils, den goldgelben Glanz der Frauenaugen und das gelb-orange Essen.

Vor einer gewissen Zeit wurde in Europa viel über den berühmten Film von Perry Hanzell „The Harder They Come" gesprochen. Dieser Film stellt eine tief begriffene und schöpferisch gelungene Interpretation der Ereignisse aus der Gegenwartsgeschichte Jamaikas dar. Im Mittelpunkt steht das tragische Schicksal des heute legendär gewordenen Reggae, des ersten Gunman im Ghetto von Kingston. Der Film inspirierte Michael Thelwell zum Schreiben des Buches „Jamaika-Kid: The Harder They Come". Einige von meinen Patienten (extraordinäre Intellektuelle!) kannten dieses Buch und in psychologischen Sessionen, in denen ich meine Methode „Resonante Cokreation" praktizierte, erzählten mir über die Klänge der Note „E" und der Raggae-Rhythmen in ihren psychologischen Geschichten. In ihre emotionalen Reaktionen auf ihre eigenen Geschichten und Probleme sollen neue exotische „Illustrationen" gekommen sein. Die Hinwendung zu sich selbst – zum Neuen – wurde bei meinen Patienten von einer Hinwendung zum „exotischen Geschmack" des Lebens begleitet: sie bekamen Lust auf Ziegenfleisch (es sollte unbedingt auf einem schwarz-gelben Teller serviert sein!), auf den Saft der gelborangen Frucht Ackee, auf den Duft des Kaffees „Blue Mountain" oder auf einen Tee mit Rum, auf gelbe Gewürze und auf den Fisch mit gelben Augen… Ihre bildlichen Assoziationen bewegten sie zum neuen Nachdenken über die Lebensphilosophie, über das Gleichgewicht der psychischen Zustände und über den Selbstausdruck.

Hier ein kleines Beispiel: „…ein schwarzer Mensch nimmt eine große Ackee in die Hand. Vor dem Hintergrund der aufgehenden Sonne schnitzelt ein schwarzer Mann eine Holzfigur». Oder: „ein Tier mit gold-

gelbem Fell geht in der gelben Wüste. Der schwarze Mensch kämpft mit dem Feuer. Das Ganze wird vom gelben Licht überstahlt. Der schwarze Mensch strahlt gelbe Energie aus".

Also, in der Kultur Jamaikas gilt die Farbe gelb als Ursprung des Lebens. Gelb klingt wie ein eigenartiger Rhythmus, es verdrängt schlechte Gedanken und Depressionen. Es reizt zum Schaffen an und hilft bei körperlichem Unbehagen. Auch meine Patienten merkten, dass die Farbe Gelb zu positiven Emotionen verhilft und die Geistestätigkeit normalisiert. Viele von ihnen zeigten Fähigkeiten zur schöpferischen Arbeit – in ihrer Begeisterung für die jamaikanische Abart der Kultur, die einen äthiopischen Ursprung hat und zur Religion der Rastafari gehört, als einer nichteuropäisierten Fassung der christlichen Kultur.

Symbolik der Farbe gelb in Ost- und Westeuropa

In der Heiligen Schrift wird behauptet, dass das Licht und die Farbe deshalb so schön sind, weil sie von Gott geschaffen wurden, der die Bedeutung heiliger Worte und heiliger Farben festgelegt hat.

Als Hauptfarben galten im Christentum die Farben weiß, gelb (golden), purpurn und rot.

Die Farbe gelb hat ein eigenartiges Los im Christentum. Im frühen Christentum hatte sie eine positive Bedeutung als Symbol der Sonne und der „Goldähnlichkeit des Herrn im Himmel", im 12. und 13. Jahrhundert aber wurde sie zum Symbol der Lüge, des Verrats und der Schamlosigkeit des Christus-Verräters Judas.

Einzelne Traditionen in der Deutung der Farbe gelb durch osteuropäische Christen konnten bis zu unseren Zeiten erhalten bleiben. Im orthodoxen Christentum ist es nicht üblich, dass Männer den Frauen gelbe Blumen schenken, denn gelbe Blumen können als eine Information über die Untreue, als ein schlechtes Zeichen der nahenden Trennung der Liebenden verstanden werden. Im Alltag wurde Gelb mit der Leichtfertigkeit, der Leichtsinnigkeit und der Oberflächlichkeit verbunden. Im Mittelalter mussten die Huren gelbe Kopftücher tragen. Entwürdigende Behandlung des Gelben klingt heute noch in manchen Ausdrücken: „gelbe Presse", „gelber Schein" usw.

Im Unterschied zur mystisch-religiösen Symbolik des Christentums wurde die Farbsymbolik des öffentlichen Lebens Westeuropas von hervorragenden Kulturschaffenden, Philosophen und Gelehrten bestimmt. Für Aristoteles bedeutete Gelb die Sonne und das Feuer, für Leonardo da Vinci - die Erde; Hegel schuf seine eigene Symbolik, die auf der Über-

einstimmung von Farben und Emotionen aufbaute. Das Gelbe und das Helle verband er mit dem Schöpferischen, Aktiven, Munteren. Für die Symbolik Newtons waren emotionale Farbassoziationen zwischen Musiknoten und den Spektralfarben von Bedeutung: C ist rot, D ist orange, E ist gelb, F ist grün, G ist hellblau, A ist blau, H ist lila.

Die Symbolik des Gelben nahm auch in der Heraldik vieler Länder einen festen Platz ein und hatte auch die Kraft eines Gesetzes. Bis jetzt wird in den Wappen und Flaggen vieler Gegenwartsstaaten die Symbolik der Farbheraldik ohne religiöse Symbole streng eingehalten.

Es sei auch betont, dass die gegenwärtige Symbolik des Gelben auch in poetische Metapher aufgenommen wird und die Merkmale der psychischen emotionalen Bedeutung enthält. Man kann heute von einem erweiterten System der Symbolik des Gelbes sprechen. Einen Pol dieses Systems bildet die Farbe gelb – das Helle, Leichte, Leuchtende, Anheiternde, Junge, Strahlende. Am anderen Pol steht das Gelb als Symbol des Neids.

In meiner psychotherapeutischer Praxis verwende ich oft die Psychodiagnostik von Patienten nach der Methodik von Lüscher, die mit Farbbevorzugungen (die Entscheidung „für") oder mit der Gleichgültigkeit (Ablehnung, negativer Einschätzung) bestimmten Farben gegenüber verbunden ist. Bekanntlich kann die Einwirkung der Farbe sowohl eine physiologische, als auch einen psychologische Wirkung verursachen. Diese Tatsache wird nicht nur in der Psychologie, sondern auch in der Kunst, Ästhetik, Betriebshygiene sowie in anderen Sphären berücksichtigt. Die Bevorzugung des Gelben in Kombination mit anderen Farben wird nach der Methodik von Lüscher folgenderweise psychologisch interpretiert:

gelb und blau: ein Zeichen der insgesamt positiven Stimmung und des Strebens zu einem positiven emotionalen Zustand, zur Duldsamkeit;

gelb und grün: insgesamt positive Stimmung, das Streben zur Suche nach richtigen Wegen zur Lösung von aktuellen Aufgaben und zur Selbstbestätigung;

gelb und rot: etwas erhöhte geschäftliche Aufregung, das Streben zur größeren Aktivität;

gelb und lila: leichte Euphorie, das Streben zu prägnanten Erlebnissen, zur Wirkung nach Außen;

gelb und braun: negative Stimmung, Verdruss und Bedarf an einer emotionalen Entspannung und Erholung;

gelb und schwarz: sehr negative Stimmung, das Streben, allen Problemen auszuweichen, die Neigung zu wenig adäquaten, aber notwendigen Lösungen;

gelb und grau: ein negativer Zustand, Niedergeschlagenheit, die Suche nach einem Ausgang aus einer unangenehmen Situation. Unklare Vorstellungen über die Möglichkeiten einer Lösung.

Langjährige Beobachtungen der Reaktion meiner Patienten auf die Farbe gelb im psychotherapeutischen Prozess bestätigen den Schluss, zu dem viele Forscher gekommen sind: die Farbsymbolik ist fest in die Mythen eingegangen und auf zwei Wegen von Generationen zu Generationen weiter geleitet worden – auf dem genetischen und durch die Folklore. Es war aber schon immer mein Wunsch, dass die Menschen, die meine psychotherapeutische Hilfe brauchten, auch einen dritten Weg für sich entdeckten: den psychologisch-allegorischen Weg, in dem die Farbe gelb (ebenso wie die anderen Farben) als eine bedingte Bezeichnung unserer Vorstellungen vom Leben, unsrer Lebensempfindungen erscheint. Diese Bezeichnungen wären nur für uns allein da, und wir bräuchten ihre Bedeutung nicht mit den Anderen zu vereinbaren.

Psychologisch-allegorische Beispiele der Wahrnehmung und der Verwendung der Farbe Gelb

Die Allegorie wählt aus einer Vielzahl von symbolischen Bedeutungen nur eine aus. Als Forscherin darf ich mir eine Bemerkung zulassen: die Allegorie ist immer enger als das Symbol. Als praktizierende Psychologin aber bin ich überzeugt, dass Allegorien besonders zu Zeiten der seelischen Spaltungen und Konfrontationen notwendig sind. Es ist übrigens erstaunlich, dass in unserem öffentlichen Leben (nicht im intimen Persönlichkeitsleben!) viele Farben öfter erwähnt werden als die Farbe gelb: „weißer Rabe", „schwarzer Humor", „rosiges Licht", „der Krieg der Roten und der weißen Rose", „Weiße Garde", „Rote Armee", „Partei der Grünen" u. a.

Die Empfindlichkeit der Öffentlichkeit der Farbe gelb gegenüber scheint „verduftet" zu sein, aber unser individuelles Bewusstsein bestimmt die Farbe sehr eng und nur für ein bestimmtes poetisches Bild. Nehmen wir als Beispiel den russischen Dichter Sergej Jessenin: in seinen Gedichten spricht er von der „gelben Verwesung", vom „goldenen Laub", vom „Gelb des Laubs"

Das Schaffen Jessenins gehört zur russischen Literatur des „silbernen Zeitalters" und war eine Widerspiegelung seiner leidenschaftlichen

Natur. Das war ein Künstler mit einer russischen «herausfordernden» Begabung. In der Literaturwissenschaft werden die Jahre 1919-1925 als „gelbe" oder „herbstliche" Periode seines Schaffens bezeichnet. Seine psychologische Geschichte war nicht leicht, sondern verwickelt und „rissenhaft". Aber in diesen 6 Jahren hat er das Leben „gelb" empfunden und darüber in seinen Gedichten geschrieben.

In unseren psychotherapeutischen Interviews und Kommentaren zu diesen sprachen wir mit unseren Patienten oft über die Farbenpracht oder die Farbenverarmung der Seele. Die strahlende Energie des Gelben wird von manchen als eine Bedrohung, als eine Invasion empfunden. Der Mensch gewöhnt sich so stark an Stereotypen seiner historisch-kulturellen Denkweise, dass er oft überrascht ist, wenn wir gemeinsam einen neuen, individuellen Stil der Farbenempfindung „entdecken". Im psychotherapeutischen Prozess analysieren wir psychologische Geschichten der Menschen, die unsere Hilfe brauchen, und lernen die Vielfarbigkeit der Regenbogenfarben wahrnehmen, in der die Farbe gelb für jeden Menschen ihren besonderen Platz einnimmt, ihre Aussagekraft besitzt und seine Einstellung zum Leben bestimmt.

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Latente Persönlichkeitsmerkmale von Krebspatienten in der psychischen Rehabilitation der Regenerationsphase

Abstract. The purpose of this research is to discover some personal characteristics typical of the patients suffering from thyroid gland cancer at distant periods after a radical antitumoral treatment. The main group consisted of 120 patients suffering from thyroid gland cancer. The control group was made up by 55 donors. The personal characteristics of the patients and donors were studied with the help of psychodiagnostical questionnaires: (perceived well3being, activity, mood); the test of Spielberger Ch.D. and Khanin U.L. (the scale of a personal and reactive anxiety); MMPI. The main psychological features of thyroid cancer patients in the distant period after radical anti-tumour treatment were highlighted that should be taken into consideration by oncologists and endocrinologists while conducting a case follow up and their rehabilitation.

Keywords: cancer patient's personality, overt and covert personality traits, premorbid personality, psychological rehabilitation, resonant co-creation method, factor analysis

Vorwort

Für Autoren ist die Themenbehandlung der latenten Persönlichkeitsmerkmale in der psychischen Rehabilitation von Krebspatienten von besonderer Bedeutung, weil die systemische Rehabilitation von Krebspatienten nicht immer effektiv ist. Warum? Die Antwort auf diese Frage suchen die Autoren bereits seit vielen Jahren. Beobachtung und Forschung haben zum Ergeb-

nis geführt, dass die latente (nicht offensichtliche, versteckte) Äußerung von Persönlichkeitsmerkmalen von Krebspatienten einen Einfluss auf die Qualität der psychischen Rehabilitation hat.

Letztendlich hat es einen Einfluss auf die psychologischen Faktoren der Genesung, Lebensfreude und Wohlbefinden von Krebspatienten in fortgeschrittenen Etappen der Tumorbehandlung.

Um dies zu verstärken, griffen die Autoren auf die Faktorenanalyse der Untersuchungen auf, wobei die Persönlichkeitsmerkmale der einzelnen Patienten mit Schilddrüsenkrebs analysiert wurden. Dies wurde durch die Anwendung der Methode der resonanten Co-Kreation (MRC: Sibgatullina, Grüssl) in der psychologischen Rehabilitation während der Regeneration durchgeführt.

Alle unten beschriebenen Studien im Bereich der Persönlichkeitspsychologie und Gesundheitspsychologie wurden gemeinsam von Wissenschaftlern und Experten des Instituts für Bildungsentwicklung der Republik Tatarstan, des staatlichen Weiterbildungsinstitutes der medizinischen Akademie Kazan und des Instituts für Pädagogik und Psychologie der Staatlichen Universität Kazan durchgeführt

Einleitung

Seit dem Beginn des XIX Jahrhunderts wurde in der Medizin eine Hypothese über die möglichen negativen Auswirkungen von psychologischen Faktoren wie Depression, Trauer und andere Stresssituationen auf das Auftreten von Krebs festgestellt. Später, im ersten Viertel des 20. Jahrhunderts, wurde diese Hypothese nahezu ignoriert. Die Hoffnung war groß, dass die rasante Entwicklung der chirurgischen und radiologischen Behandlungen das Krebsproblem lösen wird.

Seit dem zweiten und vor allem dem dritten Viertel des 20. Jahrhunderts bekam diese Hypothese einen frischen Wind. Dies geschah nicht zuletzt unter dem Einfluss der Stresslehre des kanadischen Endokrinologen ungarischer Abstammung Hans Hugo Bruno Selye.

Von vielen russischen Wissenschaftlern wie z. B. von E.D. Sokolowa (1996), V.Y. Apchel (1999), B. Kolodzin (1997), I. Bryazgunov (1999), T. Grinting (1994), A.B. Leonow (2003) und anderen wurde die Präsenz von Stress vor der darauf folgenden Krankheit festgestellt.

Der psychologische Zustand der Person ist mit der Entstehung und Entwicklung der Krankheit verbunden. Die Forschung der menschlichen psychischen Reserven bei Krebspatienten, die einer lebensbedrohlichen Situation ausgesetzt sind, zeigt, dass die Wahrscheinlichkeit

der Anpassung an ein neues Leben, an ein Leben nach der radikalen Behandlung vom Ausmaß der Erkrankung, der Therapien und iherer Wirksamkeit, den Eigenschaften der prämorbiden Persönlichkeit [2] und der Qualität der Rehabilitation in der Regenerationsphase abhängig ist.

Unter der prämorbiden Persönlichkeit verstehen die Autoren bestimmte Änderungen des psychologischen Zustandes der Patienten. Einschließlich der persönlichen Eigenschaften, die einen direkten oder indirekten Einfluss auf die Entwicklung der Krankheit oder des Heilungsprozesses haben. Der psychologische Zustand ist ein mehrdimensionales Charakteristikum des Individuums, das in Abhängigkeit von Variablen wie ideale und reale, beobachtbare und nicht beobachtbare persönliche Eigenschaften ist. Diese Eigenschaften bestimmen die Lebensqualität, Werte und Zielsetzung des Patienten auf Genesung, Lebensaktivität, die Fähigkeit zur Bildung und Entwicklung.

Prämorbide Persönlichkeit stellt eine Gesamtheit von bestehenden Gewohnheiten, subjektiven Vorlieben, geistigen Einstellungen, soziokulturellen Erfahrungen und eine Kombination von psychischen und physischen Eigenschaften des Patienten dar. Das bestimmt das alltägliche Verhalten und die Geisteshaltung [2].

Mit Sicherheit ist die Bedeutung der psychischen Rehabilitation, die im Anschluss an eine Tumorbehandlung folgt, groß. Die bereits durchgeführte Tumorbehandlung ist nicht ausreichend für eine vollständige Genesung. Es wurden verschiedene Faktoren des psychologischen Zustandes von Patienten mit Schilddrüsenkrebs, die bereits eine radikale und operative Behandlung im Zeitraum zwischen 2007-2013 hatten, analysiert. Die Autoren kamen zu dem Schluss, dass diese Menschen nicht als gesund bezeichnet werden können, weil sie selbst den Status „Gesunder Mensch" aus subjektiven Gründen ablehnen.

Um unsere Vermutung zu bekräftigen, haben wir die Form der Interaktion zwischen den Patienten und den Rehabilitationspsychologen geändert und führten in den Prozess der psychischen Rehabilitation die Methode der resonanten Co-Kreation (MRC: Sibgatullina, Grüssl) ein. Diese Methode beinhaltet einfache Formen der Arbeit mit den Kunstwerken und philosophischen Kommentaren zu ihnen [11, 12]. Somit bekam der Prozess der psychischen Rehabilitation für den Patienten einen neuen sinnorientierten Charakter mit der Ausrichtung auf die Entwicklung eines neuen Lebensbewusstseins und einer anderen Denkweise. Für den Patienten ist es möglich geworden seine eigene Lebenseinstel-

lung zu verändern, eine neue Haltung zu sich selbst zu finden, seine Lebensweise kreativ umzugestalten und neue psychische Ressourcen [9] zu bilden.

Psychologische und kreative Integration in der Rehabilitation

Als Beispiel wurden die Kunstwerke der österreichischen Malerin Stefanie Grüssl präsentiert. Philosophie und psychotherapeutische Wirkung der Kunstwerke von Stefanie Grüssl sind bereits seit langem in den europäischen psychologischen Kreisen bekannt. Ihre Ausstellungen haben wiederholt wissenschaftliche Kongresse von Psychologen und Psychotherapeuten begleitet [6].

In Russland wurde Stefanie Grüssl im Jahr 2002 nach einem Treffen mit den russischen Psychologen auf einem psychotherapeutischen Weltkongress in Wien bekannt. Unmittelbar danach hat eine der Autoren dieses Artikels am Beispiel von Kinder die ersten Untersuchungen über latente Persönlichkeitsmerkmale von Krebspatienten durchgeführt. Dies wurde nicht durch das Testmaterial, sondern durch die Anwendung der resonanten Interaktion im Rehabilitationsprozess zwischen dem Patienten und dem Rehabilitationspsychologen anhand der Bilder von Stefanie Grüssl durchgeführt

Der co-kreative Mechanismus dieser Interaktion basiert auf einem Dialog zwischen dem Patienten und dem Rehabilitationspsychologen. In diesem Dialog geht es um philosophischen Inhalt der künstlerischen Gestaltungen und Kommentaren, die von der Künstlerin selbst dargestellt wurden.

Während der Anwendung des Kunstmaterials von Stafanie Grüssl außerhalb der Grenzen der Kunsttherapie, wurde der Grundstein für den Aufbau der Methode der resonanten Co-Kreation mit der Rehabilitationskomponente gelegt.

Im Jahr 2007 haben die Autoren den ersten wissenschaftlichen Bericht über die Ergebnisse ihrer Arbeit präsentiert. Der Bericht wurde an der Sigmund Freud Privatuniversität Wien, im russischen Weiterbildungsinstitut der medizinischen Akademie, an der Humboldt-Universität in Berlin und in anderen wissenschaftlichen, Institutionen abgehalten. Das Interesse an der Methode der resonanten Co-Kreation war in Russland groß. Nur hatten die Autoren damals noch keine Befürworter und Akzeptanz. Ihre nächsten Untersuchungen wurden im Bereich der Forschung der verborgenen Persönlichkeitseigenschaften bei Krebspatienten gewidmet. Dies wurde während der psychischen Rehabilitation

nun durch die Anwendung der Methode der resonanten Co-Kreation untersucht.

Im Vordergrund stand für die Autoren die Erkennung der latenten Persönlichkeitseigenschaften bei Krebspatienten, d.h. jenen Eigenschaften, die für Onkologen und klinische Psychologen nicht offensichtlich waren und die den Genesungsprozess unterstützen oder hindern.

Die Organisation der Forschung und wissenschaftliche bzw. praktische Aspekte der Arbeit

Seit dem Jahr 2004 wurden diagnostische Untersuchungen der latenten Eigenschaften von Schilddrüsenkrebspatienten organisiert und durchgeführt. Dies wurde während der psychischen Rehabilitation nach der Tumorbehandlung in der republikanischen onkologischen Klinik in Kazan (Russland) und in den Rehabilitationszentren durchgeführt. Der wesentliche Teil der Rehabilitation wurde durch Programme der Einzel- und Gruppenpsychotherapie, durch sozialpädagogische Schulungen und Trainingseinheiten aufgebaut.

Das Ziel der Trainingseinheiten, die bereits nach der Tumorbehandlung bei Schilddrüsenkrebspatienten stattfanden, war die Vermittlung von Technik der "Progressiven Muskelentspannung" nach Jacobson [3]. Auch die Vermittlung der Analysetechnik von der künstlerischen Gestaltung und die Erarbeitung des eigenen philosophischen Kommentars zu ihr war das Ziel der Trainingseinheiten, die in verschiedenen Phasen des Genesungsprozesses stattfanden [7, 8].

Eine der psychologischen Trainingsetappen der psychischen Rehabilitation trug zur effektiven Behandlung, der Beseitigung der Stressbelastung, der erfolgreichen Regeneration, der Rückkehr der Patienten zum aktiven, vollwertigen Leben und zur Risikoreduktion des Wiederauftretens der Erkrankung bei [3]. Bei der Gruppenarbeit mit Krebspatienten wurde das Rehabilitationsprogramm auf die Leistung der psychologischen Hilfe und nicht auf die ärztliche psychotherapeutische Wirkung konzentriert. Die Trainingseinheiten wurden so gestaltet, dass weder das Verfahren noch seine Ergebnisse den Patienten eine Beeinträchtigungen zufügen würden. Das bedeutet, dass es keinen Einfluss auf die Gesundheit, den geistigen Zustand oder der sozialen Herkunft gab. Die Patienten wurden über das Ziel des Trainings informiert. Die Sitzungen fanden erst dann statt, nachdem sie der Teilnahme zugestimmt haben.

Das Trainingsprogramm, das die latenten Persönlichkeitsmerkmale untersucht hat, beinhaltet folgende Aspekte:

• Aneignen von Entspannungsfähigkeiten.

• Kunsttherapie ohne zu zeichnen.

• Arbeit mit den künstlerischen Gestaltungen in den Träumen der Krebspatienten.

• Die Suche nach den semantischen Grundlagen der künstlerischen Gestaltungen in den Werken von Stefanie Grüssl [10].

• Der Vergleich der eigenen philosophischen Kommentare zu den Bildern und der Kommentare, die im Katalog der Künstlerin [5] analysiert wurden.

• Kreativitätsaufgaben, die die Mobilisierung der latenten Ressourcen des einzelnen Patienten und seine Muskelentspannung erforderten.

Als Leitfaden für die Autoren diente die Tatsache, dass die emotionale Belastung der Patienten während der Ausführung der kreativen Aufgaben von einer Spannung der quergestreiften Muskulatur begleitet wird. Hingegen während der emotionalen Beruhigung wird auch die quergestreifte Muskulatur entspannt.

Wenn der Patient auf die Erhaltung der Gesundheit achten will, muss er auf Stressbelastung bewusst mit Entspannung reagieren lernen. Mit dieser Art des aktiven Schutzes kann die Wirkung des Stressimpulses verhindert werden oder, wenn die Stresssituation noch nicht eingetreten ist, den Stress reduzieren. Damit können die psychosomatischen Störungen im Körper verhindert werden [14]. All das hat die Mobilisierung der latenten Eigenschaften im Laufe des Trainings gefordert.

Die angewendete Methode der resonanten Co-Kreation (MRC: Sibgatullina, Grüssl) gemeinsam mit der angewandten Technik der Muskelentspannung haben folgende Ergebnisse bewirkt:

• Normalisierung des emotionalen Zustandes der Patienten.

• Steigerung des Selbstwertgefühles.

• Überwindung von Ängsten.

• Beseitigung des Stresszustandes und der inneren Dysbalance.

Um eine subjektive Selbsteinstellung des Krebspatienten im Leben erfolgreich umsetzen zu können, haben die Autoren in das Rehabilitationsprogramm Elemente der assertiven Strategien einbezogen [7].

Die Arbeit wurde parallel mit zwei Patientengruppen durchgeführt. Die Patienten (25 Personen, Durchschnittsalter 42,5 + 0,9) hatten bereits die radikale Schilddrüsenkrebsbehandlung abgeschlossen. Die Sitzungen fanden zweimal pro Woche, je drei Stunden im Zeitraum von zwei Monaten statt. Die Kontrollgruppe bestand aus 23 Personen. Als Dia-

gnosetools wurden folgende Methoden verwendet: Persönlichkeitstest (Minnesota Multiphasic Personality Inventory (MMPI)), Test zum Befindlichkeitsprofil (Profile of Mood States (POMS)) und Spielberger-Hanin State-Trait-Angstmodell (State/Trait Anxiety Inventory (STAI)). Allen Patienten (insgesamt 93 Personen, später kamen noch 27 dazu) wurde psychische Rehabilitation angeboten. Nur 25 Freiwilligen haben sich dafür entschieden. Von den 66 Patienten der Kontrollgruppe sind nach zwei Monaten für die Kontrolluntersuchungen 23 Freiwillige geblieben.

Hypothese zu Beginn der Studie

Zu Beginn der Studie wurde von den Autoren folgende Hypothese aufgestellt: Persönlichkeitsmerkmale von Schilddrüsenkrebspatienten äußern sich lang nach der Tumorbehandlung in Angst, Hypochondrie, Neurotizismus, Hysterie und in müde Lebensgeistern. Es gibt eindeutige Zusammenhänge zwischen den Persönlichkeitsmerkmalen von Schilddrüsenkrebspatienten und dem Einfluss auf die Faktoren der Genesung, des Wohlbefindens, der sozialen Aktivitäten und der Lebensfreude. Diese Zusammenhänge unterscheiden sich in den Gruppen der gesunden Menschen und der Patienten.

Entsprechend den Hypothesen wurden aktuelle wissenschaftliche Ziele formuliert:

- Theoretische und experimentelle Darstellungen über die Forschung der Merkmale der prämorbiden Persönlichkeit sollen in der psychologischen und medizinischen Literatur systematisiert werden.
- Untersuchung und Beschreibung der Persönlichkeitsmerkmale der Schilddrüsenkrebspatienten im Zeitraum lang nach der Tumorbehandlung.
- Analyse der Faktoren von Persönlichkeitsmerkmale bei Schilddrüsenkrebspatienten nach der Tumorbehandlung
- Feststellung der Nachhaltigkeitsgrade und der Verfügbarkeit der Zusammenhände zwischen den Merkmalen der persönlichen Eigenschaften, die die Faktoren der Genesung bestimmen.
- Beschreibung der nicht beobachtenden und nicht offensichtlichen Persönlichkeitsmerkmale im Zeitraum der fortgeschrittenen Phase der psychischen Rehabilitation und in der Regenerationsphase.

Die Autoren verwendeten eine Reihe von praktischen Methoden und Methoden der Faktorenanalyse. Mit ihrer Hilfe wurden latente bzw. verborgene Merkmale der persönlichen Eigenschaften von Schilddrüsen-

krebspatienten im Zeitraum lang nach der Tumorbehandlung untersucht.

Die Rolle der prämorbiden Persönlichkeit hat bei Schilddrüsenkrebspatienten im Zeitraum lang nach der Krebsbehandlung eine große Bedeutung. Es wurden Zusammenhänge zwischen dem Aufretten der Hypochondrie, Psychasthenie, Psychopathie, Hysterie und dem Einfluss auf die Faktoren der Genesung, des Wohlbefindens, soziale Aktivitäten und der Lebensfreude festgestellt.

Der theoretische Wert dieser Untersuchung besteht darin, dass die erhaltenen Ergebnisse die Rolle der prämorbiden Persönlichkeit im Zeitraum lange nach der Tumorbehandlung bekräftigen. So konnten die theoretischen und empirischen Erkenntnisse in der Persönlichkeitspsychologie und in der medizinischen Psychologie erweitert werden. Die Anwendung der Methoden der Faktorenanalyse ermöglichte die Feststellung der latenten (unbeobachteten, versteckten) Persönlichkeitsmerkmale bei Schilddrüsenkrebspatienten, sowie deren Ursachen und Zusammenhänge.

Die praktische Bedeutung der Studie basiert auf einem einheitlich erarbeiteten psychologischen diagnostisch-therapeutischen Konzept für Schilddrüsenkrebspatienten während der Regenrationsphase nach einer radikalen Behandlung mit der Anwendung der resonanten Methoden im Rahmen des Aufenthaltes in den onkologischen Kliniken oder Rehabilitationszentren.

Vergleichende Analyse und Analyse der Faktoren

Es wurde eine vergleichende Analyse der wichtigsten Zusammenhänge bei der untersuchten Kontrollgruppe mit Schilddrüsenkrebspatienten nach Spearmans Rangkorrelationskoeffizient durchgeführt. Die Werte wurden am Anfang der Studie und zwei Monate später verglichen. Diese Analyse zeigte, dass nach der Spielberger - Hanin Skala von aktueller (State Angst) und habitueller Angst (Trait Angst) diese Gruppe die höchsten Werte hat. Diese Werte haben aber keinen Zusammenhang mit anderen Werten. Die Ergebnisse 2 Monate später zeigen, dass habituelle und aktuelle Angst einen positiven Zusammenhang mit allen Skalen des Persönlichkeitstests (MMPI) (bei $p \leq 0,05$, $r=0,56$) hat und weist negative Werte mit allen Skalen des Tests zum Befindlichkeitsprofil (POMS) auf. Das heißt je höher die Werte der Niedergeschlagenheit, der Tatkraft und des Missmuts sind, desto niedriger der Wert der habituellen Angst. (bei $p \leq 0,05$, $r= -0,68$, $r= -0,54$ $r= --0,74$). Die aktuelle Angst

hat einen negativen Wert mit dem Faktor der Niedergeschlagenheit (bei p<0,05, r= -0,50).

Die vergleichende Analyse der Durchschnittswerte mit Hilfe der Student-t-Verteilung (Wahrscheinlichkeitsverteilung) ergab keine Unterschiede. Die Durchschnittswerte der untersuchten Kontrollgruppe wurden vor dem psychologischen Training „Vor dem Training" und zwei Monate später „Nach dem Training" analysiert.

Die Faktorenanalyse der Kontrollgruppe „Vor dem Training" hebt vier Faktoren hervor:

1. 21% der Faktoren 1. Grades: Psychopathie-Skala (Die Maßzahl der Korrelation 0,82); Psychasthenie-Skala (Die Maßzahl der Korrelation 0,84); Schizophrenie-Skala (Die Maßzahl der Korrelation 0,87) des MMPI-Tests.

2. 16% der Faktoren 2. Grades: Niedergeschlagenheit (Die Maßzahl der Korrelation -0.74); Tatkraft (Die Maßzahl der Korrelation -0.81); Missmut (Die Maßzahl der Korrelation -0.86) des POMS-Tests.

3. 13% der Faktoren 3. Grades: K-Skala (Korrekturskala) (Die Maßzahl der Korrelation -0.75) des MMPI-Tests.

4. 16% der Faktoren 4. Grades: Hypochondrie-Skala (Die Maßzahlen der Korrelation 0,74) und Depression-Skala (Die Maßzahlen der Korrelation 0,77) des MMPI-Tests.

Die Faktorenanalyse der Kontrollgruppe „Nach dem Training" hebt auch vier Faktoren hervor:

1. 21% der Faktoren 1. Grades: Hypochondrie-Skala (Die Maßzahl der Korrelation 0,90); Hysterie-Skala (Die Maßzahl der Korrelation 0,95); Psychasthenie -Skala (Die Maßzahl der Korrelation 0,85) des MMPI-Tests

2. 23% der Faktoren 2. Grades: Niedergeschlagenheit (Die Maßzahl der Korrelation -0.85); Tatkraft (Die Maßzahl der Korrelation 0.84); Missmut (Die Maßzahl der Korrelation -0.86) des POMS-Tests und die Skala der aktuellen Angst (Die Maßzahl der Korrelation 0,71).

3. 21% der Faktoren 3. Grades: F- und K-Skala (Die Maßzahl der Korrelation -0.80); Paranoia-Skala (Die Maßzahl der Korrelation 0,76); Hypomanie-Skala (Die Maßzahl der Korrelation 0,70) des MMPI-Tests.

4. 12% der Faktoren 4. Grades: L-Skala (Lügenskala) (Die Maßzahlen der Korrelation -0,73) und Psychopathie-Skala (Die Maßzahlen der Korrelation 0,80) des MMPI-Tests.

Der Vergleich der wichtigsten Zusammenhänge nach Spearmans Rangkorrelationskoeffizient vor und nach dem psychologischen Training zeigt, dass der POMS-Test nach dem Training einen positiven Zusammenhang der Faktoren der Niedergeschlagenheit, Tatkraft mit der F-Skala des MMPI-Tests und negative Korrelationswerte der Spielberger-Skala von aktueller (State Angst) und habitueller Angst (Trait Angst) (bei p <0,05, r = 0,45, r = 0,36, r = -0,73, r = -0,37) aufweist. Genau so nach dem Training hat sich die Zahl der positiven und negativen Zusammenhänge von aktueller (State Angst) und habitueller Angst (Trait Angst) mit den Skalen des MMPI-Tests vergrößert (bei p <0,05, r = 0,33, r = 0,33).

Die Faktorenanalyse hebt drei Faktoren vor dem Training und vier Faktoren nach dem Training hervor.

1. 31% der Faktoren 1. Grades: Aktuelle Angst-Skala (Die Maßzahl der Korrelation 0,71); Hypochondrie-Skala (Die Maßzahl der Korrelation 0,77); Depression-Skala (Die Maßzahl der Korrelation 0,73); Hysterie-Skala (Die Maßzahl der Korrelation 0,80); Psychopathie-Skala (Die Maßzahlen der Korrelation 0,90); Psychasthenie-Skala (Die Maßzahl der Korrelation 0,81) des MMPI-Tests.

2. 24 % der Faktoren 2. Grades: Missmut-Skala (Die Maßzahlen der Korrelation -0,81) des POMS-Teest; Habituelle Angst (Die Maßzahlen der Korrelation 0,71) der Spielberger-Skala; L- und K-Skala (Die Maßzahlen der Korrelation -0,71) des MMPI-Tests.

3. 15 % der Faktoren 3. Grades: F- und 9-Skala (Die Maßzahlen der Korrelation 0,93) des MMPI-Tests.

Nach dem Training:

1. 26% der Faktoren 1. Grades: Hypochondrie-Skala (Die Maßzahl der Korrelation 0,81); Hysterie-Skala (Die Maßzahl der Korrelation 0,86); Psychopathie-Skala (Die Maßzahl der Korrelation 0,83) Psychasthenie-Skala (Die Maßzahl der Korrelation 0,87) des MMPI-Tests

2. 14% der Faktoren 2. Grades: Die Skala der aktuellen Angst (Die Maßzahl der Korrelation 0,92); Missmut (Die Maßzahl der Korrelation -0.77) des POMS-Tests;

3. 17% der Faktoren 3. Grades: L- und K-Skala (Die Maßzahl der Korrelation -0.80); Paranoia-Skala (Die Maßzahl der Korrelation 0,75) des MMPI-Tests.

4. 16% der Faktoren 4. Grades: Niedergeschlagenheit (Die Maßzahl der Korrelation 0,76) und Tatkraft (Die Maßzahl der Korrelation 0.73) des POMS-Tests.

Die vergleichende Analyse der Durchschnittswerte von Schilddrüsenkrebspatienten mit Hilfe der Student-t-Verteilung ergab signifikante Unterschiede: Niedergeschlagenheit-Skala des POMS-Tests, Hypochondrie-Skala des MMPI-Tests, Hysterie-Skala des MMPI-Tests (p <0,018721, t = 2,5384).

Die Systematisierung der theoretischen und experimentellen Untersuchungen der prämorbiden Persönlichkeit unter den Schilddrüsenkrebspatienten stellte fest, dass Persönlichkeitsmerkmale einen Einfluss auf den Verlauf der Krankheit oder den Genesungsprozess haben. Die prämorbide Persönlichkeit der Schilddrüsenkrebspatienten impliziert folgende Eigenschaften: Selbstzweifel, eine passive pessimistische Lebenseinstellung, Misserfolgsvermeidungsmotivation, niedrige Stresstoleranz, Tendenz zu zweifeln, übermäßige Selbstkritik und soziokulturelle Erfahrung.

Schlussfolgerung. Reflexsion.

Die experimentellen Untersuchungen der Persönlichkeitsmerkmale von Schilddrüsenkrebspatienten im Zeitraum lang nach der Tumorbehandlung haben folgendes gezeigt:

- für die untersuchten Schilddrüsenkrebspatienten ist die Hypochondrie charakteristisch. D.h. der Kampf gegen die Krankheit wird in den Kampf „für das Recht krank zu sein" transformiert.
- Hysterie; Neurotische Angst wird in funktionelle somatoforme Störungen transformiert
- Psychasthenie – Reduktion der Stresstoleranz
- Passive pessimistische Lebenseinstellung, schizoide Persönlichkeitsstörung, soziale Defizite, das Leben in einer Traumwelt, der Verwirrungszustand.

Es ist für Patienten wichtig ihren inneren Zustand zu kontrollieren. Ihre Impulsivität ist verborgen und auf sich selbst konzentriert.

Die Latente Analyse von Persönlichkeitsmerkmalen unter Schilddrüsenkrebspatienten nach der Tumorbehandlung zeigte die Nachhaltigkeitsgrade und die Verfügbarkeit der Zusammenhände zwischen den Merkmalen der persönlichen Eigenschaften, die die Faktoren der Genesung bestimmen. Folgende Zusammenhänge wurden festgestellt: Niedergeschlagenheit und habituelle Angst bei $p \leq 0,05$ r= -0,52; Niedergeschlagenheit mit der Hypochondrie-Skala bei $p \leq 0,05$ r= -0,57; Niedergeschlagenheit mit der Depression-Skala bei $p \leq 0,05$ r= -0,51; Tatkraft mit der Missmut-Skala bei $p \leq 0,05$ r= 0,53; Tatkraft mit der habitueller

Angst bei p<0,05 r= -0,51; habituelle Angst mit der Hysterie-Skala bei p<0,05 r= 0,57; habituelle Angst mit der Psychasthenie-Skala bei p≤0,05 r= 0,50.

Die wichtigsten Faktoren der Genesung bei Schilddrüsenkrebspatienten im Zeitraum lang nach der Tumorbehandlung und im Rahmen der psychischen Rehabilitation sind die Kontrollen des Wohlbefindens, des sozialen Unternehmungsgeistes und der Lebensfreude.

Psychologische Arbeit mit Schilddrüsenkrebspatienten im Rahmen der psychologischen Betreuung in den onkologischen Kliniken, Gesundheitszentren und in den Rehabilitationszentren ist durch die Kombination der Anwendung der Methode der resonanten Co-Kreation (MRC: Sibgatullina, Gruessl) und der Methode der progressiven Muskelentspannung (MPMR: Jacobson) erfolgversprechend [3, 11, 12].

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Chapter 6

Education Management in Lifelong Learning

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Management of international projects of informal education

Abstract. The authors propose to consider the peculiarities of management of international informal projects in the format of benchmarking European educational practices. Special attention is paid to the review of objective difficulties and psychological risks that may affect the project goals and results.

Keywords: informal education, benchmarking, international project management, the dissynchrony of professional development.

Our world has changed a lot and continues to change. Formal or 'vertical' education, which one receives through the stages of the public education system in any country of the world, no longer meets the modern demands of life in a changed world order. Lifelong learning is therefore seen as a necessary and increasingly important element of modern education systems. And the key aspect to improving the quality of education, especially in postgraduate education and professional development, is informal education.

According to the International Standard Classification of Education, adopted at the 36th session of UNESCO's General Conference in November 2011, informal education is a non-institutionalised, unstructured education, which may include learning activities that occur in the family, workplace, local community and daily life, and its focus is determined by the individual, the family or the community [2]. That is to say, informal education is an out-of-form education, an individual's cognitive activity that accompanies his or her daily life and is not of a

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purposive nature, the variety of which is reflected in all aspects of interpersonal communication and in processes of active individual or group social interaction [1].

The key characteristic of informal education is that it is aimed "inwards", inside the person, his or her own meaning of life, professional training and personal development, a person who has not lost interest in learning about his or her inner world, who is also capable of critical thinking, deep reflection and a constant search for the meaning of his or her own life events [5].

In European postgraduate education practice and professional development, informal education is increasingly recognised and applied. The Institute for Intelligent Integration /III Institut für intellektuelle Integration www.rbs-ifie.at./ actively uses and promotes informal education as the main format for implementing professional development programmes as appropriate and as fully meeting the objectives of "lifelong and life-long learning" in post-graduate adult education, and relevant to the sustainable development principles of the world's best regions [4].

A special place in the activities of the Institute for Intellectual Integration in the context of solving life and professional tasks of an individual is occupied by international information projects in the format of benchmarking of European educational practices, organised for teachers of general and higher education in Russia and the CIS countries. By benchmarking we mean the process of identifying, learning and adapting the best practices and experiences of other organisations to improve the performance of one's own organisation [6].

The management of an international informal education project in a benchmarking-practice format involves organising a large number of meetings with European education specialists in a relatively short period of 1-2 weeks of project participants coming to Europe. In this way, project participants find themselves in a situation of formal/informal communication with foreign colleagues, immersing themselves in the real conditions of their work "in the workplace", which enables an in-depth assessment of the professional experience and situation as a whole, their critical analysis, identification of their own and others' capabilities, and also sets a reflection on their own activities and high motivation in setting new professional goals on the way to further self-development.

An analysis of the Institute for Intellectual Integrations experience in organising and managing international informal benchmarking pro-

jects between 2016 and 2020 revealed their high efficiency and promise. However, the authors also highlighted various challenges/risks that executives and managers/administrators of this type of projects may face.

The objective difficulties of managing an international informal education project include the following:

- Identification of relevant project topics in line with the European Educational Development Strategies 2030 and the target group of possible project participants interested in these topics. This is particularly difficult at the forward-looking annual planning stage of the institute's activities.

- Choosing of the project team, involving the selection of a project supervisor and project administrators/managers, selection of experts with unique experience in the field. The process of interacting with experts and educational organisations before concluding concrete agreements is particularly costly in terms of time and administrative resources.

- The time frame for project preparation and implementation. Thus, project preparation to implementation can take from 4 months to half a year, which is not usual for Russian and CIS participants and is difficult for them, especially from an organisational and financial point of view.;

- Consideration of the differences in socio-economic, legal, socio-political, socio-cultural, demographic, ethno-religious norms in the countries of the participants and the countries of the project organisers. For example, analysing the situation of teacher-student interaction may be complicated by differences in the legal norms governing this kind of relationship in different countries. Etc.

The authors want to pay special attention to the psychological aspects of international informal project management, which represent risks that can positively or negatively affect project objectives and results and to which project organisers need to pay special attention.

First of all, as such aspect can be highlighted the level of preparedness of project participants for foreign internships, as well as possible different psychological manifestations of cultural shock when getting into another cultural, linguistic, national, architectural, aesthetic environment, related to the presence/absence of foreign travel experience of participants and their level of psychological health.

Secondly, project participants face certain difficulties in intercultural communication and cooperation with European counterparts. It is particularly difficult for participants to overcome the language barrier, even if they are proficient in a foreign language. In addition, building

partnerships with foreign colleagues also requires knowledge of certain ethical norms and rules of work in international professional teams.

Thirdly, during the course of the project, there may be difficulties in the group interaction of the project participants due to both group dynamics processes and the individual characteristics of the participants, as well as difficulties in adapting to the new living conditions (e.g. domestic living conditions, organising shared accommodation, the need to adapt to using other foods, etc.).

A particular risk may be the psychological acceptance/disapproval by participants of the basic principles of informal education and benchmarking technology, namely: readiness to "merging with complication" [5] and self-development; readiness to learn in any situation, not only specially organised, but also in any situation of informal communication and interaction with experts and colleagues; objective evaluation of received experience without preconceptions and negative criticism to determine possibilities for its use in their own activities; readiness for reflection and self-reflection, the ability of teachers to step out of their usual formats and stereotypes of perceptions of education systems, etc.

The latter risk may be related to the dyssynchrony of the professional development of project participants, which manifests itself as a mismatch and imbalance of personal and activity qualities of a professional and may manifest itself at the motivational, socio-behavioural and other levels [3].

The presented analysis of the Institute for Intellectual Integrations experience in organising and managing international informal benchmarking projects shows that all the above aspects should be taken into account in the process of organising and conducting an international project. However, it is the psychological factors that have a decisive influence on the result of an information project, each of which needs to be studied more thoroughly.

Finally, the authors have to mention another risk that the whole world faces in 2020 is the occurrence of force majeure. For example, due to the COVID-19 pandemic in 2020, many academic mobility projects around the world were cancelled, including those of the Institute for Intellectual Integrations. The projects were forced to move to another format - digital - and many, both organisers and participants, were unprepared for this form of professional development. In this context, even an unusual trend emerged — the geographical importance of the internship location.

The epidemiological situation around the world is still complex. It is impossible to predict how and when this situation will be resolved. However, the authors hope that the ability of educators around the world to break out of familiar formats and stereotypes of perception of education systems will allow them to find alternative forms and technologies of inherently informal education that are relevant to the modern demands of life in a changed world order.

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Management of the system of additional professional education teachers: new models and trends

Abstract. At the present stage, additional professional education is an actively developing educational system that allows us to meet the needs of society for competent and competitive teachers. This article deals with the management of the system of distance education, in particular, the problem of distance education, as well as the design of the structure and content of the practical model of distance learning in the system of additional professional education in the realities of a remote remote region. The article analyzes the theoretical foundations of distance learning and the features of distance learning in the system of additional professional education of teachers and specialists. The article reveals the scientific justification and practical possibilities of organizing distance learning. The concepts of "distance education" and "distance learning" are separated, the differences between the distance form and the traditional full-time form are established.

Keywords: model, trend, management, distance education, distance learning, additional professional education, design, feature, region, online, offline, organization, process.

Introduction

The current socio-economic situation puts forward new requirements for the implementation of modernization of additional professional education, optimization of resources, changes based on the fuller use of potential and the introduction of distance education technologies

and new management systems. In the context of the modernization of the Russian education system and the increasingly complex economic situation in Russia and the world, the development of additional professional education is becoming more and more urgent, allowing for rapid response to changes in the external environment and solving problems of personal competence development, taking into account the needs of students and employers who form the labor market. The informatization of modern society, the development of information and communication technologies, changes in the education system have caused the need for the use of distance education technologies in additional professional education.

Today, distance education technologies in the educational process of additional professional education are a requirement of the time, the organization of which is carried out with the predominance of various distance forms, methods and means of teaching, as well as using information and educational arrays of the Internet. This possibility of distance learning allows you to flexibly respond to the educational process, for example, to train a large number of students, accessibility, mobility, reduction of material and time costs, individualization of training taking into account the pace of perception of information, performance of tasks, etc. Training in a distance format allows teachers and specialists to compare their professional capabilities, regardless of the region of residence, without interrupting their main work and forming their individual program. Thus, distance learning in educational centers of additional professional training provides students from remote and hard-to-reach regions with no difficulty to improve their skills and pass professional retraining. This is especially important for teachers and specialists of the Republic of Sakha (Yakutia), since the territory of this region is the largest and most sparsely populated and represents one of the largest subjects of the Russian Federation. Purposeful organization of adaptive distance education for citizens who are isolated from the center due to the inaccessibility of the transport scheme and the vastness of the territory, which concerns both nomadic people and people with special disabilities, should be necessary and indispensable. Weak Internet or lack of it, lack of qualified personnel, limited access to remote technologies-all this creates certain problems when organizing distance learning in real mode.

The pandemic of the new coronavirus infection, which affected the entire country, gave a powerful impetus to the development of remote

educational technologies used in the educational process. The emergency transfer of distance learning in the context of the pandemic showed significant differences from properly planned online training based on mass open online courses. If earlier we considered distance learning as an independent alternative learning system, now we define it as an integral part of the traditional education process, which allows us to optimize the educational process taking into account all modern requirements and requests of students. The creation and implementation of flexible modular programs of additional professional education, an individual approach, the creation and placement of convenient content, the availability of services and platforms for teachers and students, as well as the implementation of programs at the request of students and applications of educational institutions and municipal methodological services became important requirements for the DPO system.

The development of information technologies and distance learning in the system of additional professional education today requires the active formation of a network form for the implementation of educational programs. The implementation of distance learning opportunities for educational purposes requires the development of special approaches to the application of knowledge and methods. Various models and technologies of distance learning play a special role in its solution today.

Literary review

The system of additional professional education is an individual, socially significant, practice-oriented model for solving urgent problems in all spheres of the economy. The analysis of recent studies and publications that considered these aspects of this problem is reflected in the works of V. G. Domracheyev, L. B. Osipova, M. V. Moiseeva, A. E. Petrov, M. Yu.Bukharkina, Yu. V. Aksenov, T. F. Gorbunkova, V. P. Tikhomirov, V. I. Soldatkin, S. L. Lobachev, O. G. Kovalchuk, O. M. Barbakov, O. M. Goreva, A.V. Khutorsky, A. A. Andreev, V. L. Uskov and others. The study of distance education as a part of the system of professional training of specialists made it necessary to study a large block of studies of teachers-theorists and practitioners devoted to the peculiarities of the organization of the educational process, among which we should mention A. Ya.Aizenberg, Yu. K.Babansky, V. P. Bespalko, V. I. Vdovyuk, T. S. Nazarov, N. M. Platonov. Features of informatization of the learning process in the system of professional training are reflected in the works of A. A. Aronov, T. I. Baklanova, V. I. Zakutsky, L. S. Zo-

rilova, A. I. Kapterev, N. V. Krotova, N. A. Slyadneva, K. V. Tarakanova, V. I. Chernichenko, P. A. Chervatyuk, V. P. Chizhikov.

Materials and methods

The research on the design of the distance learning model was conducted on the basis of the Educational and Methodological Center of the Pedagogical Institute of the North-Eastern Federal University named after M. K. Ammosov. The Educational and Methodological Center is a structural division of the university, established in order to ensure the quality and development of the content of additional professional education. On the basis of the center, training is conducted on the programs of advanced training and professional retraining in various areas in the field of pedagogy, in the field of preschool, secondary general, secondary and higher professional additional education. The Center creates all conditions for the deepening and expansion of theoretical knowledge, the development of practical skills, thereby observing the principle of continuity of education. The main principle of the model of additional professional training should be the assessment of the level of individual development of the teacher. The implementation of these courses is now taking place with the use of e-learning and distance learning technologies. The popularity of distance learning is increasing. Many managers paid attention to the opportunities for developing their employees on-the-job, as well as reducing the organizational costs of training. Thus, with the growing popularity of distance learning, new forms and models should appear. The emphasis on the need to expand distance learning in the system of additional professional education, in particular, in the Training and Methodological Center, is due to the following factors:

- intensification of the educational process;

- the increased overall needs of the region for teaching staff and the need to provide teachers to remote localities;

- the systemic need for timely professional development and implementation of DPO programs for teachers working in remote localities;

- the need to ensure the constitutional rights to receive additional professional education for citizens with health restrictions, without leaving home;

- the need to develop adaptive pre-school programs for obtaining high-quality education at an individual pace.

At the university, the electronic information and educational environment provides for all types of classes, procedures for evaluating

learning outcomes, the implementation of which is provided with the use of e-learning, based on the Moodle learning management information system.

Any model of the process of additional professional education with the use of distance educational technologies should provide (Fig. 1):

flexible combination of students ' independent activities with various sources of information

prompt and systematic interaction with the course teacher

group work by type of training in collaboration with course participants

joint telecommunications projects of the course participants

monitoring of students ' learning activities and presentation of intermediate and final learning outcomes

Fig. 1 Features of the DPO distance learning model

In difficult socio-economic conditions, distance education becomes especially relevant for remote regions, for people with low mobility, as well as for self-education and independent work of students. Effective implementation of distance learning is possible only with a purposeful program of creating high-quality multimedia products for educational purposes in fundamental, general professional and special disciplines. The educational system in such a society should be an advanced system. It is important for us to use models of full distance learning, which are relevant for students from remote, especially the Arctic regions of the republic, and flexible distance learning with partial use of distance educational technologies.

The model in which there is a partial use of distance learning technologies allows you to implement an educational program in which full-time classes alternate with distance learning. The use of such models by the organization is determined in each specific case by the conditions available to the organizations themselves, namely, the availability of a developed regulatory framework, material and technical base, the appropriate level of the organization's personnel, the organization of training and methodological support for teachers, the availability of developed training documentation using distance learning opportunities.

Thus, in order to build an optimal model of distance learning in the system of additional professional education, an information and communication subject environment is necessary, functioning on the basis of an electronic information and educational environment(EIOS), which is understood as interaction with the user as a subject of information communication and a person, provided that the components of the environment are filled with subject content and activities with the information resource of the subject area.

The main goal of designing a distance learning model is to form optimal connections and ensure complex interaction of subjects and objects of the educational process.

When designing the model of distance learning and interaction of its subjects, the following key functional subsystems are identified (Fig. 2):

Methodological - independent development of full-fledged didactic materials, guidelines, workshops and other educational documentation	Psychological and pedagogical - formation of variable trajectories and training routes, individual work with students	Software and hardware - formation, operation, maintenance, automation of the organization of the educational process

Quality - satisfaction of students with the process and conditions of training based on the formation of their rating, the creation of an assessment of the quality of training, the system of certification of teachers	Marketing-the study and analysis of the market of educational services, the reaction of consumers to the emergence of new types of educational services and their implementation

Fig. 2 Functional subsystems of the DPO distance learning model

The model should be a technological, convenient and modern form that takes into account the individual needs of both the teacher and the student, their specialization and different levels of qualification.

Designing a model of distance learning based on an Educational and methodological center is a promising direction for the development of a system of advanced training and professional retraining. This is primarily due to the territorial, climatic, demographic and national characteristics of the region. The peculiarity of the ways of developing distance learning is due to the fact that the region currently has [22]:

- the predominance of rural settlements (89% of the total), located at a sufficiently large distance from each other (the average distance between the centers of the ulus is 173 km;

- low population density, component 0.1 people per 1 sq. m.;

the lack of sufficient communication in the areas of (weak Internet, interruption of transport communication between settlements in the period of freeze-up and thaw, often lasting up to 5 months);

- the territorial remoteness of the North-Eastern Federal University from the leading university centers of the country poses the problem of scientific, methodological, and organizational support for distance forms of obtaining additional professional education, timely professional development to maintain the quality of education in the region and active professional interaction of teachers at different levels of the education system.

It is necessary to note a number of advantages of distance learning in our region:

- audience coverage: if during a live lecture, students are limited to the audience, then in online platforms and webinars the number of participants is not limited. At the same time, a traditional face-to-face session gathers about 30 participants, an open lecture attracts about 100 listeners, and a much larger number of listeners can participate in online platforms;

- there is no need for active movements of lecturers and students: representatives of different regions and students from other countries can gather at the same distance course. The organizers have the opportunity to get access to the best regional and foreign practices and prepare their speech without the cost of a lecturer's arrival, which is especially important in the conditions of the territorial remoteness of the Republic of Sakha (Yakutia) from the main centers of the country;

- capacity and flexibility: materials are easy to adjust to the needs of the audience. They consist in the fact that all communication during distance learning takes place via the Internet, and the presenter can almost instantly respond to the requests of listeners, presenting additional methodological or presentation materials. The openness of communication through a shared chat allows all participants of distance learning to be equally heard;

- visibility of the materials: given that all listeners are in an online environment, they are more immersed in what is happening. The level of concentration on the material in such training is much higher, since you do not need to adapt to the surrounding environment, for example, a lecture hall, and be distracted by what is happening around you. When conducting distance learning, you can simultaneously distribute test tasks, conduct an interactive survey and immediately analyze the

results. And within the framework of a comprehensive webinar or lecture, students have constant access to electronic materials, electronic libraries, which, of course, is a strong supporting factor that helps in their studies. Also, distance learning provides an opportunity to operate with any methodological and lecture materials, and thanks to a convenient management interface, when all the materials are collected in one place, it is easier to interact with them: view, download, upload, share files. A significant opportunity to save on printed materials in the preparation of presentation materials. And one of the most significant advantages is that distance learning is a cost-effective tool for employee development, which allows you to reduce the organization's costs for preparing and conducting face-to-face classes, as well as a flexible pricing policy for providing additional professional education services.

The standard model describes the basis for the development and provision of an instrumental model of distance learning in the system of additional professional education, as well as the main pedagogical, logistical, personnel, financial and organizational components and their corresponding tools. The model describes the main content-thematic areas of distance learning in the system of additional professional education that are relevant in the current situation and involve distance learning: the use of standard elements and their adaptation to specific conditions for the implementation of distance learning; the creation of an information space; the involvement of qualified specialists and teachers; financial support and organizational and managerial elements.

In the course of implementing the distance learning model, organizations of additional professional education should keep in mind the unity of content and approach, the importance of building training based on the implementation of the tasks set. The model unites specialists of different fields – methodologists, IT workers, tutors, lecturers, teachers-developers of additional professional education programs.

In the design and implementation of the model of distance learning with the use of distance educational technologies and e-learning in the Educational-methodical center will:

- creation of conditions for the functioning of the electronic information and educational environment that includes electronic information resources, electronic educational resources, a collection of information and telecommunication technologies, appropriate technological tools and to ensure the development of students educational programs in full regardless of the location of students;

- provide educational and methodological assistance to students, including in the form of individual consultations provided remotely using information and telecommunications technologies;

- independently determine the volume of the classroom load and the ratio of the volume of classes conducted through direct interaction of the teacher with the student, and training sessions using e-learning, distance learning technologies;

- to provide the appropriate applied technologies for the level of training of pedagogical, scientific, educational and auxiliary, managerial personnel in additional professional programs.

The model of distance learning in the system of additional professional education is based on the following principles (Fig.3):

Project planning is an interconnected set of activities aimed at achieving specific goals and obtaining expected results. Analysis and monitoring of the scope of work, quality, timing, cost and risks

Synergy - a combination of the results of several directions with levels of efficiency. The source can be tangible and intangible resources

Consistency - a set of elements that regulate the basis of the DPO system: mission, strategy, structure, personnel, functions, processes, physical means

Innovation - the constant introduction of new technologies in the learning process, the development of new ideas, the expansion of the number of educational opportunities

Fig. 3 Principles of the distance learning model

The model represents the interaction of participants in the distance learning process on different computer platforms, in our work mainly in Moodle. The variants of the organization of the educational process, the tools used and possible communication solutions are suggested.

For our project, the main technological types of work are related to the activities of teachers of the Pedagogical Institute - the creation of programs for additional professional education of teachers for advanced training or professional retraining, working with an electronic platform for placing programs, as well as the purchase of computer equipment, the maintenance of staff units, hourly payment to the teaching staff, the involvement of lecturers, listeners, etc. The overload of the staff of the Training and Methodological Center responsible for the documentation support of the department implies an increase in the staff. It is necessary to provide a human resource for information support of distance

learning of the DPO system, a specialist-a network tutor who owns the means of creating websites and programming, for servicing computer and telecommunications equipment that regulates the educational process.

The project should be developed due to a number of real reasons. It has already been noted above that it is necessary to organize e-learning with distance learning technologies for additional professional education of teachers. The project is aimed at a clear target audience – teachers who want to add to their knowledge base. The project is economical for students, classes are held remotely. The project brings tangible, measurable achievements for the Pedagogical Institute-improves the reputation of the organization in the university. The results can be measured and evaluated in the long term - the implementation of the state social order. The project does not require an excessively large amount of additional resources. The project is well connected with the education strategy in the region and creates conditions for other projects at the institute.

It is worth noting the positive impact of distance learning in cases where it complements and dilutes traditional learning. The force majeure educational situation, which arose against the background of the coronavirus pandemic and the development of its second wave, put the education system in front of the need to organize the educational process in the conditions of distance learning. In the context of the protracted COVID-19 pandemic, the implementation of additional professional education programs for teachers based on e-learning using distance learning technologies is the only means of organizing continuous training in the Training and Methodological Center. The implementation of the development of additional educational programs takes place in the most convenient form, regardless of the location, mobility, employment, health status, financial situation of students, etc. The previous theoretical substantiations of the formation of the digital educational environment, the presence of an integral electronic information educational environment of the university contributed to a worthy solution of the problems.

Currently, the center's prosperity is based on its development, which implies an inevitable increase in document flow in quantitative and qualitative terms, requires new approaches in the field of information support for the organization's activities and additional resources.

Conclusions

In the context of the analysis of the existing contradictions inherent in additional professional education, the features of distance learning in the system of additional professional education are determined, the factors and trends in the development of distance learning of additional professional education are determined.

Analyzing the theoretical foundations and features of distance learning in the system of additional professional education, we come to the conclusion that it is advisable to design a model of distance learning in the system of additional professional education using the regulatory framework of distance learning, distance educational technologies, material and technical base, personnel potential of the organization and training and methodological support of teachers using e-learning, where educational organizations of additional professional education will have the opportunity, based on standard models and mechanisms, to provide flexible distance learning with a differentiated approach in accordance with the available opportunities and specific needs of the population.

Based on this, when designing distance learning in the system of additional professional education, we found that distance learning, due to a number of objective conditions, becomes the most flexible, adaptive type of training, its distinctive features allow us to better solve the problems of additional professional education.

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Informelles Bildungsumfeld

Lina Embacher

Abstract. Under the conditions of intensive development and implementation of innovative technologies in all areas of human life, the paradigm of lifelong learning has become popular. This article presents a study of the restoration of society in education at all levels. As well as the degree of development of informal education in Russia and the EU countries. This study reveals answers to questions whether a document is needed to confirm education, or it is more important to develop the variability of competencies in each person and not stop being formed all his life. The article describes the actual requests of the society and the need of preparing a practice-oriented education system for a competitive person who contributes to the strategy of accumulating human capital in a country.

Keywords: informal education, variable learning, needs for self-development, personal competence, formal program, informal program, longlife practices, future teacher, renewal of knowledge, informal sphere, accumulation of human capital, the prerequisites for the formation of a socially mobile personality

Unter den Bedingungen einer intensiven Entwicklung und Implementierung innovativer Technologien in allen Bereichen des menschlichen Lebens ist das Paradigma des Lernens während des gesamten Lebens aktuell geworden. Eine Person, die in der Lage ist, neues Wissen zu suchen und zu beherrschen und nicht standardisierte Entscheidungen zu treffen, ist der wichtigste Wert und das Hauptkapital der modernen Gesellschaft. Die Idee, dass eine Person unter den Bedingungen der ständigen Ver-

wirklichung ihrer Fähigkeiten ein Talentträger ist, wird zum wichtigsten Akzent in der Innovations-, Investitions- und Clusterpolitik. Diese Ideen sind in den strategischen Dokumenten der Mitgliedsgruppen der Russischen Föderation festgelegt, die auf die Bildung und Akkumulation von Humankapital abzielen [1]. Dementsprechend wird lebenslanges Lernen als ein notwendiges und zunehmend wichtiges Element moderner Bildungssysteme angesehen.

Die in Europa modernisierten Bildungssysteme sind offen für die Anforderungen, die in den Berichten internationaler Foren und Organisationen sowie prominenter Wissenschaftler von enthalten sind unsere Zeit. Sie reagieren aktiv auf die Notwendigkeit, die Idee des lebenslangen Lernens umzusetzen, die zu einem Instrument geworden ist, das die Anpassung des Mitarbeiters an sich ändernde Lebens- und Arbeitsbedingungen sicherstellt. Anpassung an die Bedingungen der neuen Realität, gekennzeichnet durch ein schnelles Tempo und einen beschleunigten Rhythmus der Transformationen. Die Bildungssysteme sind damit beauftragt, Bedingungen für die Bildung von Menschen in jedem Alter und auf allen Ebenen zu schaffen, sowohl im System der formalen als auch der außerschulischen, informalen Bildung. systematische Erweiterung und Erneuerung von Wissen und Fähigkeiten; Erwerb neuer beruflicher Qualifikationen und Verbesserung bestehender Qualifikationen; Beherrschung neuer Technologien; die Bildung unternehmungslustiger, einfallsreicher, sich dynamisch entwickelnder Persönlichkeiten, die sich an die Anforderungen des Arbeitsmarktes anpassen und die Lebensbedingungen ständig ändern können [4, S. 59].

I.F. Sibgatullin und E.G. Skobeltsyn sprechen von der Notwendigkeit, den Bürgern unabhängig von ihrer Bildung, ihrem sozialen und wirtschaftlichen Status die Möglichkeit zu geben, aktiv und zeitlebens an innovativen Veränderungen teilzunehmen [5].

Die Idee des lebenslangen Lernens, die von der Internationalen Bildungskommission der UNESCO für das 21. Jahrhundert formuliert wurde, wird in der Schlüsselthese „Vom lebenslangen Lernen zum lebenslangen Lernen" vorgestellt. Derzeit gibt es eine Institutionalisierung verschiedener Arten von Bildung, die auf die Entwicklung und Implementierung verschiedener Bildungsdienste abzielt. Eine neue Terminologie wird konsolidiert: formelle, nicht formale und informelle Bildung.

Das Europäische Zentrum für Berufung und Ausbildung CEDEFOP unterscheidet die Konzepte der formalen, nicht formalen und informellen Bildung in Bezug auf Lernziele, Lernzeit oder Lernunterstützung [7]

... Regelmäßige formelle Schulungen werden von einer Bildungs- oder Ausbildungseinrichtung angeboten, die strukturiert ist und zur Zertifizierung führt. Formales Lernen ist aus Sicht des Lernenden zukunfts- und ergebnisorientiert. Informelles Lernen ist Lernen, das in geplanten Aktivitäten enthalten ist, die nicht ausdrücklich als Lernen bezeichnet werden, aber ein wichtiges Element des Lernens enthalten. Informelles Lernen ist in Bezug auf den Lernenden beabsichtigt. Eine solche Ausbildung unterliegt keiner obligatorischen Zertifizierung. Diese Schulung umfasst beispielsweise das Erkunden neuer Dinge, das Verfolgen von Ereignissen innerhalb und außerhalb des Unternehmens sowie die Interaktion mit Personen (insbesondere in Berufsfeldern), von denen gelernt werden kann. Unbeabsichtigtes, unstrukturiertes Lernen als Ergebnis alltäglicher Arbeit, Familien- oder Freizeitaktivitäten wird als informell verstanden. In der Regel führt dies nicht zu einer Zertifizierung.

Wissenschaftler, die die lebenslange Bildung im Ausland analysieren, glauben, dass die "lebenslange Bildung" in allen aufstrebenden Bildungssystemen der Informationsgesellschaften einen wichtigen Platz einnehmen wird [5, S. 60].

Die Aktualisierung des öffentlichen Interesses an informeller Bildung wird durch eine einfache Anfrage im Internet bestätigt. EIN V. Okereshko, der mit Hilfe der Yandex-Suchnetzwerkressource bewertet, gibt vergleichende Indikatoren für die Erwähnung informeller Bildung: „informelle Bildung" gibt 18.000 Antworten im russischsprachigen Segment des Netzwerks, im englischsprachigen Segment auf die Abfrage "Informelle Bildung" - 72 Millionen Antworten; auf die Frage "informelles Lernen" - 284 Millionen Antworten [2]. Diese Merkmale zeigen das wachsende Interesse und den Unterschied von mehreren Millionen Dollar zwischen russischen und ausländischen Standorten.

Auf russischen Websites werden hauptsächlich kategoriale Fragen, Fragen der Organisation, des Managements, der Finanzierung usw. erörtert. Forscher des Problems der informellen Bildung geben an, dass in Russland verallgemeinerndes Material und die Formen schlecht präsentiert werden der Umsetzung von Bildungsprogrammen der kontinuierlichen Bildung, aber gleichzeitig unter Berücksichtigung der Tatsache, dass es informelle Bildung ist, die die Probleme der Bildung der Lebenseinstellungen einer Person effektiv lösen kann, wird das Defizit an beruflicher Kompetenz und "informelle Bildung" wieder aufgefüllt der Lebensstil eines Erwachsenen, der sein Potenzial maximieren will [3, S. ... 66] konzentriert sich auf die Aktualisierung des wissenschaft-

lichen und pädagogischen Verständnisses des Wachstums der beruflichen Kompetenz einer Person im Kontext der informellen Bildung und die Notwendigkeit, ihre theoretischen und methodischen Grundlagen zu entwickeln.

Ausländische Websites informieren aktiv über die Schaffung von Bedingungen für informelle Bildung. So wurde 2011 in der Stadt Ober-Ramstadt ein spezialisiertes WorkFamily-Institut gegründet, um informelle Bildung zu testen und zu studieren, das Manager und Personalmanager ausbildet, deren berufliche Kompetenzen genau nach ihrem Handeln wie in der Familie gebildet werden [6]. Der Gründer dieses Instituts, Joachim Lask, führte ein Projekt durch, bei dem zwei Menschengruppen, die in formellen und informellen Bildungsprogrammen studierten, beobachtet wurden. Eine Gruppe kam nach dem Studium an der Universität zur Arbeit in das Unternehmen ("formelles Programm"), während die andere direkt in das Umfeld desselben Unternehmens integriert wurde ("informelles Programm"), wo sie parallel dazu Wissen erwarben Praxis in der Firma. Forscher haben herausgefunden, dass die "Formalisten" Wissen haben, aber nicht die persönlichen Kompetenzen, die die "Informellen" haben. So kamen sie zu dem Schluss, dass ein praxisorientierter Ansatz eine Unabhängigkeit bei der Strukturierung ihres persönlichen Lernens impliziert, die es nicht nur ermöglicht, Standardkenntnisse und -fähigkeiten zu erwerben, sondern auch die erforderlichen persönlichen Kompetenzen zu erwerben.

So kann das Verständnis der Unterschiede zwischen formaler, nicht formaler und informeller Bildung durch ein primitives Beispiel dargestellt werden: Ein Schüler, ein zukünftiger Lehrer, lernt und erwirbt Wissen, während er an einem Schulschalter eines bestimmten Lehrers sitzt - Dies wird eine formale Form des Unterrichts sein. Derselbe Schüler mit demselben Lehrer übernimmt die Rolle eines Tutors bei der Durchführung von Projekten und sammelt so Fähigkeiten und Erfahrungen in einem informellen Umfeld. Ein Schüler praktiziert in einer Bildungseinrichtung und taucht in das Umfeld der Kommunikation mit professionellen Lehrern ein. Er führt eine Reihe von Aktionen durch, interpretiert das, was er in der Praxis gesehen hat, erwirbt unfreiwillig bestimmte Kompetenzen und lernt dabei informell. Unter dem Gesichtspunkt der Absicht des Individuums sind sowohl formelles als auch informelles Lernen beabsichtigt, d.h. Eine Person geht zu einer Bildungseinrichtung mit der Absicht, nicht nur etwas zu lernen, sondern auch ein Zertifikat, Zeugnis oder Diplom zu erhalten, das die Ausbildung

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bestätigt. Beim informellen Lernen kann sich eine Person bewusst sein, dass sie etwas Neues gelernt hat, aber möglicherweise nichts davon wissen. Informelle Bildung ist eine Lebenspraxis im Kommunikationsprozess, die darauf abzielt, die Voraussetzungen für die Bildung einer sozial mobilen Persönlichkeit zu schaffen, die intern zur Selbstverbesserung motiviert ist und Bedürfnisse nach Selbstentwicklung hat. Die Formen eines solchen Trainings umfassen: alltägliche Kommunikation, Selbststudium, situatives und variables Lernen, Analyse von Informationen aus Literatur, Medien und anderen. Informell können Sie unabhängig vom Ort fast überall studieren, das heißt direkt im sozialen Umfeld: in der Familie, in der Schule und außerhalb der Schule, bei der Arbeit und im Urlaub. Informelles Lernen erfolgt unbeabsichtigt und die Person erhält kein Bildungszertifikat.

Wenn wir all das analysieren werden, kommen wir zu dem Schluss, dass ein Absolvent, der eine "formelle" Ausbildung erhalten hat und nicht die Praxis einer "informellen" Ausbildung hat, möglicherweise weniger notwendige berufliche und persönliche Kompetenzen besitzt als jemand, der praktische Erfahrung gesammelt hat und Wissen direkt durch die Einführung in das berufliche Umfeld, ohne ein Zertifikat oder ein Bildungsdiplom zu haben. Dementsprechend sollte der zweite stärker auf dem Arbeitsmarkt gefragt sein als der erste. Unter modernen Bedingungen ist es fast unmöglich, eine Stelle als Spezialist ohne Dokumente zu finden. Daher kann unserer Meinung nach nur ein praxisorientiertes Bildungssystem eine wettbewerbsfähige Person vorbereiten, die zur Strategie der Akkumulation von Humankapital in einem Land beiträgt.

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Chapter 7

International experience
of integrating education

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Ainur Konuratova

Factors of effective education (European experience and its application in Kazakhstan)

Abstract. The Republic of Kazakhstan faced the importance and urgency of reforming the system of higher education for a long time in the light of the possible successful integration into the world community. This need led to a number of measures to integrate the higher education system into the world community, including joining the Bologna process, participating in international academic mobility programs for students and graduate students. These reforms have had a positive impact on the education system in the republic, but they also demanded significant transformations and radical restructuring of the education system itself. The article considers both the peculiarities of joining the Republic of Kazakhstan to the Bologna process, and analyzes the intermediate achievements, as well as the internal legislative framework, which has been reconstructed in accordance with the requirements of this process.

Keywords: education, Bologna process, parameters of the Bologna process, criteria for the success of education, strategic development plan

Introduction

Modern education has become one of the most important factors of the nation's competitiveness. It is obvious that the influence and significance of this factor is immeasurably increasing in the context of globalization. The quality of human resources provided by the education system contributes to the improvement of the

country's living standards. In this regard, its main objective should be to improve the level of education and training of specialists. Improvement of the level of education will increase the competitiveness of today's young people; affect the increase in labor productivity [11].

The strategic goal of Kazakhstan in the national concept of the education system, the state program for the education development, in the main directions of the social and economic policy of the government is the integration into the European educational space within the Bologna process. Currently, the Bologna Process unites 46 countries, which graphically illustrate the change in the paradigm of higher education from a person taught - to a person learns productivity [11].

The aims of the Bologna Declaration are the development of a single pan-European labor market for highly qualified workers, free access to European education, and the provision of a comparable system of higher education. Kazakhstani higher education system has declared its intention to join the Bologna process and a number of important legislative measures and documents have already been undertaken that should contribute to the integration of our education system into the European educational space [9].

Methodology

As is known, the new Education Law adopted in 2017 fixed a number of fundamental points that will develop the higher school of the Republic of Kazakhstan in the context of the Bologna process.

It is commonly known that the Bologna Process mainly aims at increasing the access to higher education, further improvement of the quality and attractiveness of the European higher education, expansion of the mobility of students and teachers and ensuring the successful employment of university graduates due to the fact that all academic degrees and other qualifications should be oriented on the labor market. The joining of the Republic of Kazakhstan to the Bologna process gives a new impetus to the modernization of higher professional education, opens up additional opportunities for the participation of Kazakhstani universities in the projects funded by the European Commission, and students and teachers of higher education institutions in academic exchanges with European universities [13].

The goal of the declaration is to establish a European area of higher education, as well as to activate the European system of higher education on a global scale.

The declaration contains six key principles.

1. The adoption of the system of comparable degrees, including through the introduction of the diploma supplement to ensure the employability of European citizens and the international competitiveness of the European higher education system.

2. The adoption of the three-tier system of education: Bachelor, Master and PhD.

3. The introduction of the European system of the credit transfer to support large-scale student mobility (credit system). It also provides the right of students to choose their disciplines. It is recommended to adopt ECTS (European Credit Transfer System) as a basis for this process, making it a funded system capable of operating in the framework of the concept called "life-long learning".

4. Significant development of student mobility (based on the performance of two preceding paragraphs). The enhancement of the mobility of teachers and other staff by the means of set-off of the time period spent while working in the European region. The establishment of standards for transnational education.

5. The promotion of the European cooperation in the field of quality assurance with a view to develop comparable criteria and methodologies.

6. The promotion of necessary European dimensions in the field of higher education, especially in the area of curriculum development, inter-institutional cooperation, mobility schemes and integrated programs of study, as well as practical training and research.

Furthermore, within the framework of the Bologna process, there are a number of mandatory, facultative and recommendatory parameters below listed:

1. Mandatory parameters of the Bologna Process include:

2. A three-tier system of higher education.

3. Academic Credit System (ECTS).

4. Academic mobility of students, faculty and administrative staff of universities.

5. European Diploma Supplement.

6. Quality assurance of higher education.

7. The establishment of the unified European Research Area.

Recommended parameters of the Bologna process contain the following:

1. Social support of low-income students, including the following indicators:

- Annual quotas provided for orphaned children when allocating state educational grants.
- Local executive bodies annually allocate social educational grants for orphaned children and children left without parental care.
- The budgets of universities provide with social packages for various groups of students, including students from low-income families.

2. Unified European assessment.
3. Active involvement of students.
4. Life-long learning.
   Facultative parameters of the Bologna Process imply:
1. Harmonization of the content of education in areas of training.
2. Nonlinear areas of students' education, elective courses.
3. Module system.
4. Distance education, online courses.
5. Academic rankings of students and faculty staff.
6. Harmonization of the content of education in the areas of training.
7. Non-linear trajectories of students' education, elective courses.
8. Modular system.
9. Distance learning, e-learning.
10. Academic ratings of students and teachers [11].

Thus, according to the methodology of the Bologna Process, in case all the above requirements are met, and the main goal of the program is complied, the country's education system is considered mobile, open and corresponding to the requirements of the program document. Within the framework of this article the analysis on the conformity of the Kazakhstani education system to the requirements of the Bologna Process has been conducted.

Research results

Increasing the effectiveness of educational reforms in modern Kazakhstan can be evident in the system analysis and the consideration of the crucial factors that have an essential influence on higher education. Among them:

1. deepening of integration processes within the Bologna reforms taking into account Kazakhstan's realities;
2. ongoing demographic crisis and the massification of higher education;

3. underdevelopment of the national system of qualifications, lack of quality professional standards in most priority sectors of the economy;

4. transformation of the labor market and imbalance in the structure of demand and supply of demanded specialties and professions;

5. increase in the importance of intellectual potential for sustainable economic development;

6. weak interaction of the system of higher education and the world of work [6].

Having considered these factors and the high dynamics of the changes in the global educational space, it is essential to shift the emphasis from the knowledge-based model to the competence-based approach in higher education, which allows to move from the reproduction of knowledge to interdisciplinary-integrated requirements for the results of education.

Effectiveness and quality in conditions of massification of higher education have become key parameters of socio-economic development. At the same time, effectiveness is generally assessed as a managerial-economic category and quality as multidimensional integral characteristics of the results of educational activity.

Currently there is no generally accepted definition of the concept of "quality". This can be explained due to the fact that different aspects of the term cannot be adequately formalized. In addition, the main stakeholders of the educational process, namely, students and their parents, university professors, employers, the administration of universities, the executive body represented by the Ministry of Education and Science of the Republic of Kazakhstan as subjects of management with different objective functions have different semantic concepts of quality [7].

The problem of defining the concept of "quality of education" is also connected with the ambiguity of the process of education itself. The question remain topical: is education a service or a social good? On the one hand, quality is ensured by the level and content of educational programs, the quality of faculty, the development of the infrastructure of educational and scientific processes. On the other hand, the quality of learning outcomes depends on the level of preparation of entrants and the level of motivation of students for dynamic study.

In higher education, quality can be viewed in two ways: first, as a result of educational activity; second, as a process aimed at achieving the planned results. Therefore, it is necessary to draw a line between the process and the result, differentiating the levels of education and quality requirements from various customers.

The quality as the result has been defined as an integral characteristics that reflects the degree of conformance of the accomplished educational results in compliance with regulatory requirements. This characteristic performs only an orienting function, since the components of the integral characteristic can vary in accordance with the goals of education. In case the labor market requirements are considered as a priority, the set of indicators is transformed into specific professional competencies.

When assessing the quality as an educational process (most often with accreditation), the complex of the components is taken into account: the quality of teaching, the quality of educational programs and teaching staff, the level of research, material and technical resources, the level of informatization, the development of the quality management system, and etc. Thus, the concept of "quality of education" has a complex character, combining the parameters of all components of education, conditions and the results of the educational process. Above-mentioned characteristic should be envisaged as a dotted designation for this complex parametric concept, which requires deep methodological research.

All existing types of control primarily aim at identifying poor quality education and developing quality improvement tools. In this paper, the stimulation of intra-university quality management systems and independent accreditation is under the discourse. In the context of globalization and the transition to a single educational space, the educational services market is undergoing changes. An unfavorable demographic situation strengthens attention to quality evaluation procedures that need to be transformed into an integral part of an intra-university quality culture.

Accreditation in Kazakhstan started in 2001. The procedure, named as the state accreditation, was conducted by the Ministry of Education and Science of the Republic of Kazakhstan on the basis of the declarative principle: universities provided information in accordance with 27 statistical indicators. Later, this procedure was criticized, which resulted in nearly eight-year suspension within Kazakhstan [5].

In 2009-2010, the National Accreditation Center of the Ministry of Education and Science of the Republic of Kazakhstan launched the institutional accreditation of universities in Kazakhstan.

A new stage in the accreditation of universities began in 2011. Amendments to the Law of the Republic of Kazakhstan "On Education", approval of the State Program for the Development of Education of the

Republic of Kazakhstan for 2011-2020 allowed to transfer the process of independent accreditation to a competitive environment. The National Register of Accreditation Bodies was approved, which included two Kazakhstani agencies - IQAA and IAAR and four foreign ones - ASIIN and ACQUIN (Germany), AQA (Austria), ABET (USA). Institutional accreditation is carried out only by Kazakhstan agencies, and specialized (programmatic) accreditation of educational programs - any of the mentioned above.

Since 2015, state certification has been completely replaced by institutional and specialized accreditation for universities, and the state bodies in the form of licensable inspections have done state control. These decisions seem to be strategically correct in the context of the globalization of education [3].

It is essential to admit the recognition mechanism of the achievements of educational institutions of the Republic of Kazakhstan in the field of quality assurance on the basis of standards and recommendations of independent accreditation agencies. Accreditation becomes the focus of new relations, an instrument of competition, as higher education institutions can provide the society and employers with additional quality assurance training. In other words, the accreditation process at the legislative level is defined as the core element of the regulation of the educational services market. Thus, the state partly withdraws from the monopoly of the quality assessment.

The universities and the scientific and pedagogical community actively supported the institute of accreditation as a new model of an independent evaluation of the quality of education. Since 2012, over 300 educational programs have been accredited through the IAAR, over 20 Kazakhstani universities have been successfully accredited on institutional level. Over 40 universities were accredited through NCAA, more than 500 educational programs underwent the procedure of specialized accreditation.

The processes of accreditation initiated in Kazakhstan represent a socio-professional evaluation of the quality of education, with essential differences being independence, objectivity and publicity. Such an approach to quality assurance raises the confidence of higher education institutions, contributes to the increase of their competitive advantages - desirability for applicants and the relevance of their graduates to employers.

The autonomy of the universities within the framework of the Bologna process is implemented in the Kazakhstani graduate school by refusing in 2012 from the State Educational Standard (SES) of specialties and the development of educational programs with a high level of academic freedom. Instead of SES specialties, two SES were approved by the decree of the government of the RK (SES of undergraduate program and post-graduate program) were brought into force. These standards are of a framework principle, and do not take into account the specifics of a particular profession. They do not describe the qualification characteristics of the graduate with a description of the functions of professional activity, requirements for professional competencies. On top of that, it lacks concentrated exposition of the content of the educational program in the cycles of disciplines. In other words, there is no object for exercising state control. Hence, it seems logical to reject the procedure for state certification since 2015 [2].

Moreover, the education quality assurance in the Republic of Kazakhstan is regularly conducted due to participation in the Bologna process, according certain criteria, including the implementation of the first and second cycle programs, access to the next cycle, the introduction of qualifications frameworks, a credit system comparable to ECTS, the official transcript, the development of the external quality assurance system, the participation of students in the external quality assurance system, the level of international participation in external quality assurance, acknowledgement of prior learning. When analyzing these achievements for 2009-2012, the Republic of Kazakhstan demonstrated rather high results, since the achievement of the most criteria is either at the implementation stage, or needs further development where only four parameters are missing or undeveloped.

As a result, 70-89% of students are enrolled in the first and second cycle programs according to the Bologna principles. The first cycle is represented by several programs (less than 25%) that must be completed in order to get an access to the second cycle programs. Second cycle programs must be completed to be transferred to the third cycle programs. ECTS credits are distributed for all components in more than 75% of higher education programs, which allow the students to transfer and accumulate credits and credit units based on learning outcomes or loans are allocated to all components of programs his education with ECTS credit system, which allows to transfer and accumulate credits. These criteria are at the implementation stage in the Republic. While diploma

transcripts are issued free of charge in a widely distributed European language to some students or for some programs, i.e. on demand, and not automatically, the quality assurance system is implemented at the national level. Quality assurance agencies have not been evaluated for compliance with ESG. The quality control system is applicable to all educational organizations and/or programs and covers many of the main issues, which corresponds to the required refinement. Finally, the level structure, level descriptors (learning outcomes), and the number of credits have been conformed upon, students participate in one quality assurance control procedure or do not participate at all, there are no procedures for recognizing prior learning at the national or institutional/program level, which either were not developed or are absent [1].

Therefore, during 2009-2012 high results were observed from participation in the Bologna process, which led to the fact that the education system of the Republic of Kazakhstan has been highly developed, but still needs to be improved.

Next, the analysis of the achievements of the Republic of Kazakhstan in the Bologna process during 2012-2014. The criteria system was extended by one criterion, which has become very important in the conditions of the impending second wave of the World Economic Crisis and helpful for students from poor families.

Furthermore, the level of achievements in 2012-2014 significantly increased. There is no criterion that is missing or not developed, but three criteria require revision, while the two criteria are fully implemented, and five are at the implementation stage. Briefly describe the fully implemented criteria.

Completely implemented are the criteria for the first and second cycle programs, as well as the level of openness of the quality assurance system. Ninety percent of students are enrolled in the first and second cycle programs according to the Bologna principles. All educational institutions and programs can be accredited by foreign quality assurance agencies in order to fulfill their external quality assurance obligations, while meeting national requirements.

At the implementation stage, as mentioned above, there are three criteria which cover an access to the next cycle, the introduction of qualification frameworks, Kazakhstani credit system comparable to ECTS, a transcript to the diploma, the development of an external quality assurance system. The following data indicate that there are several (less than 25%) of the first cycle programs that do not provide an access to

the second cycle programs and several second cycle programs that do not give free access to third cycle programs, the NRC has been legislated or at the political level. Concerning the given case consultations or discussions at the national level were organized. Stakeholders agreed to coordinate the NSC; ECTS credits are distributed across all components in over 75% of higher education programs, which allow to transfer and accumulate credits and credit units based on the results of training. Otherwise the loans are allocated among all components of higher education programs using the ECTS credit system, which allow to transfer and accumulate loans. In addition the diploma transcript are issued free of charge in a widely distributed European language to some students or for some programs, i.e. on demand, and not automatically, the quality assurance system is implemented at the national level [1].

Among the criteria that need improvement are the following criteria were indicated for helping students from low-income families: the participation of students in the external quality assurance system, and the portability of state grants and loans for external mobility.

Thus, such progress in the development of the Kazakhstani education system is very high, since there are already very high intermediate results, consisting in the implementation of two criteria and the continuing implementation of the five criteria, as well as the complete absence of undeveloped or missing criteria. In spite of the second wave of the economic crisis, Kazakhstan managed to make a significant breakthrough in the education system and bring it closer to meet high international standards. Definitely, the development of the Republic within the framework of the Bologna process continues and, taking into consideration such high achievements in a short 5-year period, it will be systematic, with the achievement of high and brilliant results.

Discussion of results

The experience of joining the Bologna Process in Kazakhstan and other CIS countries shows that there are two extreme points of view on this issue. A significant part of higher education employees believe that Soviet higher education is the best in the world, and current reforms have a strategic goal to destroy it completely. The second group adheres to the point of view that higher education is archaic and is subject to total reform. The implementation of the norms, requirements and recommendations of the Bologna Process can be achieved through the effective solution of all academic problems.

Both of these points of view seem extreme, and preconceived interpretations of the essence and meaning of the Bologna process. It is essential to distinguish the ideology of radical reform of higher education in all directions from the pragmatic task of ensuring the conformity of Kazakh higher education institutions with the architecture of the European system of higher education on the basis of flexible and, in many respects, recommendatory principles of the Bologna process.

Definitely, the Act of joining Kazakhstan to the Bologna process does not mean that higher education will automatically become "European" in its content, structure, technologies of training, resource provision, etc. However, it is impossible to underestimate the role of Kazakhstan's joining to the Bologna process for the modernization of the national system of higher education.

It is worth noting that there is no alternative for joining Kazakhstan to the Bologna process. Refusal of this would mean the triumph of the policy of isolationism and the isolation of the national higher school from the current trends in the development of the global scientific and educational space. Education as a process of mastering the personality of the achievements of the world scientific-intellectual, artistic-aesthetic and spiritual-moral culture in principle does not recognize national-state borders. At the same time, it would be ingenuous and inconsiderate to see in the various models of organizational and methodological unification, the introduction of uniform criteria, norms and indicators of the effectiveness of university education a method of reorganizing the national system of higher education that has been protested and requires only practical implementation.

Zhumagulov stated that there is a number of risks and threats that higher education system of the Republic would face in the process of its integration into the world educational space, taking into account full participation in the Bologna process: "Joining of Kazakhstan to the Bologna Process while copying the content of educational programs without consideration of the specifics, social conditions, national traditions can lead to the loss of national and regional specifics, and as a result, the loss of competitive advantages; outflow of specialists and the shortage of human resources. Therefore, we must relate any reforms in the field of education to the needs of our state and national interests" [4].

The analysis and consideration of the specifics of the political, economic, social and cultural status and the development tendencies of modern Kazakhstani society, scientifically based understanding of stra-

tegic national interests as the basis for adapting the higher education system of Kazakhstan to the requirements of the Bologna process is clearly a task beyond the competence not only the leadership of the university, but also the Ministry of Education and Science. In this regard, a number of issues arise that need to be put right now - in the context of the fait accompli of the full-scale inclusion of Kazakhstan in the Bologna process.

One of the very complex problems our republic faced in the process of joining the education system to the Bologna process was the introduction of a multi-level education. It is assumed that the introduction of multi-level higher education would meet the following challenge: the first cycle (bachelor's degree) will satisfy the massive social demand for higher education, and the preparation of masters and doctors will contribute to the formation of professional elite. At the same time, it is worth taking into account that the general, basic knowledge, formed by the students in the framework of bachelor's degree training, and the specialized knowledge required for masters and doctors programs are two qualitatively different types of knowledge that require diversified teaching methods.

Probably one of the promising practical measures to upgrade the status of a bachelor's degree as a full-fledged higher education is not a mechanical copying of the 3 + 2 + 3 scheme, but a longer training in the bachelor's degree, which is prescribed in the Bologna process. In the case of Kazakhstan, the standard study period of bachelor programme is 4 years, and master's program it varies between 1 and 2 years. In addition, in a number of disciplines of the sciences and humanities (theoretical Physics, Chemistry, Mathematics, Philosophy etc.), teaching can not be divided into bachelor's and master's degrees.

The next serious problem is the credit-module education system. The European-style credit system, in particular, European Credit Transfer and Accumulation System (ECTS), recommended as a basic one, quite effectively solves the problems of individualization of training and evaluation of its results. At the same time, this has implications for the atomization of the student group, the spread of selfish attitudes in the student environment. In this respect, the statement of M. Lusseau, President of the University of Tours (France), is evidentiary: "Students should be able to master and activate their knowledge as isolated and disconnected cognitive sets" [4].

According to the State Programme of Development of Higher Education, the share of elective subjects in national higher education institutions will increase to 65% in Bachelor's degree programmes, 85% in Master's degree programmes and 95% in Doctoral degree programmes by 2020. Meanwhile, according to the well-known definition, the student is "a creature accustomed to looking for the easiest ways". The system of credits and problem-thematic modules, giving more freedom to students in the choice and sequence of study courses, provokes students to choose not those disciplines that are most important and significant for their professional and general cultural training, but those that are easier, or whose teachers are less demanding. This deforms both the motivation to choose subjects and the students' perception of the quality of teaching (integrity, demandingness and professional competence of teachers).

Translated with www.DeepL.com/Translator (free version)In accordance with the State Program for the Higher Education Development, the share of elective subjects in universities of Kazakhstan will increase up to 65% in the bachelor program by 2020, up to 85% in the master's program and 95% in doctoral studies. Meanwhile, according to a well-known definition, a student is "a being who has become accustomed to seek the simplest ways". The system of credits and problem-thematic modules, giving more freedom to the students in selection and sequencing the development of training courses, provokes students to choose the disciplines that are crucial and important for their professional and general cultural training, but those that are lighter, or teachers who are less demanding. Thus, both the motivation for the selection of academic disciplines and the students' perception of the quality of teaching (integrity, exactingness, professional competence of teachers) are violated.

Furthermore, the most challenging topic is the increased mobility of students and faculty. Bologna agreements stipulate that a student must study a semester or academic year in a foreign university. Cross-border mobility of students and teachers (including in the framework of academic exchange) should be provided with appropriate financial resources, organizational and institutional factors. Kazakhstani universities are not fully ready for this. However the corresponding steps are being taken. For example, in 2015, 200 million KZT were allocated to the program of academic mobility from the budget. Furthermore, one of the "pitfalls" of the mobility principle is the problem of "brain drain", the danger of massive outflow of the most qualified specialists abroad for a long period or for permanent residence.

Recognition of qualifications is also a very large problem in the framework of the Bologna Charter. So far, the principle of convertibility of diplomas to graduates of local universities does not exist. Here it takes a long and painstaking work on international accreditation of national educational programs. To date, only three Kazakhstani universities have international accreditation: Kazakh Leading Academy of Architecture and Civil Engineering with a degree in architecture, South Kazakhstan State University (seven educational programs) and Kazakh-British Technical University (engineering programs of a specialized British Marine Engineering Institute, science and technology).

The final and one of the most serious problems is ensuring the autonomy of universities. Independence and autonomy of the universities is the cornerstone of the Bologna Charter. This document notes, "Independence and autonomy of universities give confidence that the system of higher education and research will continuously adapt to the changing needs, demands of society and to the need for the development of scientific knowledge" [8].

A general conclusion from the analysis can be formulated as follows: joining Kazakhstan to the Bologna Process is a positive and non-alternative step. "In the broad sense of the word, the Bologna process is part of a general scenario in which people, ideas and information move freely across state boundaries" [8].

The Bologna process proclaimed the principle of orientation of education on European values. At the same time, Kazakhstan's participation in the Bologna process should make full use of the opportunities afforded by the Bologna Agreement itself to preserve the national traditions of higher education. Including, first and foremost, the tradition of ensuring the fundamentalism of higher university education, not subject to market conditions.

It is obvious that the Kazakhstani higher school is gradually integrating into the European educational space. State institutions and universities actively study the best practice of foreign universities in joining the Bologna Process. It should be noted that the experience of each individual country is unique, including Kazakhstan. In this regard, it is worth focusing on some of the problematic issues that prevent the active implementation of the national system of higher education in the European educational space.

In the sphere of education in Kazakhstan, there are a lot of control and supervisory procedures: state certification which is conducted once

in five years (since 2015 it has been cancelled); accreditation - institutional and specialized; international accreditation of educational programs; scheduled monitoring of compliance with the law and licensing requirements which is conducted once in five years; external evaluation of educational achievements annually. Such an excessively developed control system is not available in any country in the world.

The problem of ensuring the quality of education become complex due to the expansion of bureaucracy. The head of state highlighted at one of the meetings with the heads of ministries and departments that formal paperwork is obvious in educational institutions. Endless planned and unscheduled inspections, in many respects duplicating each other, distract teachers from pedagogical and scientific work and fix "double standards". It is necessary to minimize these control and verification procedures. In this regard, the rejection of state certification needs to be regarded as a logical continuation of the democratization of higher education initiated in the country.

MES RK should tighten the procedure for issuing licenses and post-licensing control. Institutions that provide poor-quality education must leave the market of educational services. Planned inspections for compliance with licensing requirements and compliance with legislation should be implemented on the basis of a radically updated legal framework, eliminating long-outdated standards. The right methodology of licensing verification and control should become an alternative to the historical procedure of state certification.

President Nursultan Nazarbayev in his message to the people "Strategy" Kazakhstan - 2050" set the objective of developing the national system of qualifications and creating an independent system of confirming the qualifications of specialists. The state should not simultaneously provide educational services and assess their quality [10].

Conclusion

The industrial-innovative stage of Kazakhstan's development is accompanied by the change in the structure of the economy and the increase in demand for skilled labor. There is a qualitative gap between supply and demand. Qualification of employees does not fully satisfy employers, and the education system continues to develop in autonomous logic, which does not correlate with labor market requirements.

The main vector of modernization of higher education should be the development of social partnership of universities and professional

associations of employers in the design of professional standards and practical-oriented educational programs based on the graduate's competence model. Professional standards should become a "road map" for each profession.

The lack of high-quality professional standards in many areas and professions constrains the development of competence-oriented educational program. In addition it does not allow to ensure the interfacing of procedures for final certification of graduates and certification of bachelor's qualifications. In this issue, there is a lack of consolidation of employers by industry and weak interaction between universities and employers. Additional efforts are required for inter-sectoral coordination in the development of the legal and regulatory framework for the social partnership "university-employer" in the context of the development of the national system of qualifications.

The low effectiveness of educational reforms has become a byword. Budgetary funding for higher education at around 0.4 percent of GDP is negligible compared to OECD countries (2.2 percent). This is the reason for the low level of faculty payment, the shortage of highly qualified scientific and pedagogical workers, widely practiced intercourse, which is associated with a loss in the quality of education. Normative and legal risks are caused by a frequent change of educational priorities, the lack of consistency in reforms. On a systemic basis, there is a change of education ministers (in the last twenty years, twelve heads of this department have been replaced), and the matter of modernization remains "more alive than all living" [3].

Established more than a quarter of a century ago, the ratios of the ratio of staff to teaching staff and the contingent of students have long been outdated. A high annual load of the teacher (850-900 hours) does not contribute to improving the quality of teaching. This load (about three times higher than that of a foreign professor) does not leave time for research and teaching and methodical work. In foreign universities, future bachelors do not study such a voluminous cycle of general educational disciplines (sociology, political science, basics of law, history, languages, philosophy, the fundamentals of life safety and others). In this regard, the State Program for the Development of Education for 2011-2020 was planning to reduce the share of general education disciplines from 25 to 15 percent due to the transfer of a number of high school disciplines in the curriculum of school profile education. However, such a transformation did not happen.

Today, when evaluating the effectiveness of the universities, the following criteria applied, namely, the number of foreign students, scholars invited from abroad, students leaving the country for the academic period, etc. All these criteria assessments have been borrowed from the practice of foreign accreditation agencies. Undoubtedly, they contribute to the formation of a common space for higher education, the acquisition of international experience in the field of educational process organization and quality control. However, the expediency of their introduction into the practice of the Kazakh higher school requires in-depth analysis and additional research.

The organizational and methodical measures for the development of the national quality assessment system in the direction of a significant update of the regulatory framework and the improvement of the licensing control mechanism and independent accreditation should be recognized as topical.

The findings of our research are quite convincing, and thus the following conclusions can be drawn: the Kazakhstani higher school is ready for integration into the European educational space. However, general constructive efforts and campaigns are required, both from the state bodies and from the universities.

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Chapter 8

Current models for analyzing the optimization of the organization's capital structure

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Analysis model and solvency risk assessment

Abstract. The article discusses methodological approaches to the development of a model for analyzing the optimization of the organization's capital structure, in which the main attention is paid to the principles of the concept, including the principle of effective use of equity capital, its profitability; the principle of efficient use of borrowed capital; the principle of balancing the sources of financing of the organization. Both vertical and horizontal analysis was carried out, as well as an assessment of the financial stability of the organization and a factor analysis of the return on equity. The factors influencing the optimization of leverage were considered, and the capital structure was optimized according to the criterion of maximizing the return on equity, which is becoming very relevant, especially in the context of the coronavirus pandemic and the post-pandemic period. In the process of choosing the optimal source of funding, both quantitative and qualitative indicators of the availability of resources were assessed, and a qualitative and quantitative analysis of funding channels was carried out, which was used to calculate the degree of their reliability. The capital structure was optimized according to the criterion of minimizing financial risks. In a pandemic and post-pandemic period, evidence schemes play a significant role for the practical application of a model that contributes to the growth of capital and an increase in its share in the overall structure of funding sources for the organization's activities. Procedures based on assessing changes in profitability, the structure of funding sources in a specific period of time.

The purpose of this work is to present a methodological approach to developing a model for analyzing the optimization of the capital structure of organizations in the context of the coronavirus pandemic and the post-pandemic period. As a measure of dependence, a factor analysis of the profitability of total capital is used. It is shown that the factor model takes into account various methodological approaches to the development of an assessment of the structure of funding sources for the organization's activities, the efficiency of using equity and debt capital in the context of the coronavirus pandemic and the post-pandemic period, as well as the development of management decisions aimed at capital optimization structure to increase capital intensity. This allows us to recommend these procedures for practical use.

In this article, we used regression analysis to predict the profitability of an organization's financial performance. The level of profitability of the aggregate, equity and debt capital of the organization in the planning period has been determined.

Keywords: the organization's capital structure, the factor model, regression analysis, level of profitability, solvency risk assessment.

Introduction

In modern economic conditions, the risk of insolvency is large enough and financial discipline "suffers". Therefore, great importance is paid to the analysis of solvency, liquidity assessment, risk assessment of insolvency and the likelihood of bankruptcy.

In this regard, the development of an analysis model and assessment of insolvency risk is increasing.

In addition to accounts receivable, the analysis of solvency focuses on stocks, since the formation of large stocks of goods, or raw materials for the production of products, negatively affects solvency, withdraws money from circulation. But at the same time, the main reporting form, in which the payment history of the enterprise is most informatively presented, is a cash flow statement. It is with the help of this reporting form that you can track in which areas the company made settlements and payments, what cash inflows were generated, how much all obligations were repaid, what cash balances the company had at its disposal after the settlements were made, what was the level liquidity and efficiency of its cash flows. Therefore, an analysis of cash flows will directly show what risks of insolvency can be in a modern economy.

In recent years, solvency assessment issues are becoming more widespread in the economic literature, and are also the subject of debate and discussion in various forums.

The relevance of our study is to develop a model for analysis and assessment of insolvency risk, which will comprehensively analyze the solvency and liquidity, liquidity and efficiency of its cash flows.

To achieve this goal, it is planned to solve a number of interrelated tasks:

- evaluate the various approaches of different authors to the basics of analysis and assessment of insolvency risk;

- substantiate the development of an analysis and risk model and determine the algorithm for its application;

- to develop a methodology for analysis and assessment of insolvency risk at Russian enterprises;

- develop the concept of a liquidity management model to reduce the risk of insolvency.

In our study, we proceeded from a number of hypotheses:

a. The indicators of the availability of receivables (both short-term and long-term) are growing and "inhibiting" liquidity. The violation of payment discipline by buyers and debtors is growing.

b. The activities of financial management in any field of activity cannot do without the sale of products (services or work, depending on the chosen line of business) with a deferred payment to the buyer, which leads to the formation of receivables. Under the agreement, the supplier of the goods represents the period during which the products shipped to the buyer (work performed or services rendered) are paid. In this case, the main point is the payment of products (works, services) on a specific date. If the payment deadlines have passed, and the buyer has not paid for the products (work, services), then the receivable goes into the category of doubtful, overdue. Therefore, it is important in the work of enterprises and organizations in the process of receivables management to prevent the moment when real receivables become overdue, to establish such relationships with customers that would prevent violation of payment discipline on their part.

in. In order to reduce risks, it is necessary to develop a new methodological toolkit, including an algorithm for applying the model for assessing and managing the risks of insolvency of production activities.

d. The need to develop the concept of a theoretical and methodological model for assessing the risk of enterprise insolvency management,

based on the introduction of innovative approaches to assessing cash flow liquidity.

As a result, they should study the experience of regions that successfully implement the efficient use of cash and current assets in general, which are positively reflected in the reduction of insolvency risks.

Materials and methods

The study was conducted based on materials from the Ural Federal District (hereinafter referred to as the Ural Federal District).

The most important industry and industry pride in the Urals District is engineering. In the Ural Federal District almost 10% of all engineering products of the country are produced. Enterprises of this industry produce up to 60.8% of freight railway cars of the Russian Federation, 21% of bridge structures. The equipment with the brand of the Ural enterprises, which is distinguished by its uniqueness and high quality, is installed at the leading petrochemical, metallurgical and engineering plants of Russia. Ural machine-building enterprises are the largest exporters of their products in world markets. Developed enterprises of the engineering industry are located in the south of the Tyumen region, in the Sverdlovsk, Chelyabinsk and Kurgan regions. Among the leading enterprises of the Tyumen region for the production of trailers, batteries and woodworking machines: OJSC Tyumen Motor Builders, CJSC Welding Electrodes Plant, OJSC Neftemash, OJSC Tyumen Battery Plant, OJSC Tyumen Shipbuilding Plant, etc.

The study was conducted on the basis of materials from Russian enterprises that produce and sell more than 50 types of mineral processing and mining equipment. Our study was conducted at joint-stock companies in the region.

The objective of the activity, which includes the release of quality products aimed at meeting the needs of customers, which are not only representatives of the Russian Federation, but also neighboring countries: enterprises of Kazakhstan, Belarus, Estonia, as well as foreign countries: China, Iran.

The analysis showed that for this group of enterprises the following dynamics of financial results is characteristic.

In general, for all enterprises in 2018-2019. there is a decrease in income and expenses from core activities:

a) revenue from sales decreased by 25.86% or 785 424 thousand rubles;

b) the cost price decreased by 20.27% or 445 255 thousand rubles;

c) gross profit decreased by 40.47% or 340 169 thousand rubles;

d) selling expenses decreased by 28.73% or 9853 thousand rubles;

e) management expenses decreased by 8.04% or 45 936 thousand rubles;

f) profit from sales in 2018 decreased to a loss in 2019 by 284,380 thousand rubles.

The excess of other expenses over the company's income in 2019, as well as the resulting loss from sales, did not allow them to work with a net profit. As a result, a loss of 71,280 thousand rubles was recognized. The deterioration of the economic situation in the country this year negatively affected the activities of many manufacturing enterprises.

For the period 2019-2020 the situation is changing for the better. Revenues and expenses from core activities grew, which led to a positive financial result of core activities - profit from sales.

The following changes have occurred in the composition of the assets of some joint stock companies:

a) in 2018-2019 non-current assets increase by 11.85% or 231 759 thousand rubles. The reason for this was the growth of fixed assets (an increase of 7.30%), other non-current assets (an increase of 150.03%). The cost of financial investments decreased by 12.34% or 4268 thousand rubles;

b) in 2018-2019 current assets are reduced by 2.06% or 21 559 thousand rubles, which was affected by a decrease in inventories (by 11.0% or 74 711 thousand rubles), as well as a decrease in cash (by 92.13% or 140 821 thousand roubles.);

c) in 2019-2020. the value of non-fixed assets increased: the increase was 45.24% or 989,284 thousand rubles. due to an increase in other non-current assets by 600.21% or 710 509 thousand rubles, deferred tax assets - by 4168.50% or 7525 thousand rubles. The cost of fixed assets also increased by updating them for new production: by 11.51% or 231,260 thousand rubles .;

d) the value of current assets in 2019-2020 increased by 37.26% or 381 350 thousand rubles. due to the strong increase in the provision of the enterprise with cash: by 579.47% or 68 686 thousand rubles, increase in the value of reserves - by 35.81% or 216 484 thousand rubles. At the same time, receivables decreased by 11.23% or 37 323 thousand rubles, which can be regarded as a positive phenomenon in the liquidity of KMZ JSC, which is associated with cash inflows in 2019-2020.

So, according to the results of the dynamics assessment, the total value of the assets of the enterprise increased as a whole in the analyzed period 2017-2020, while the growth in 2018-2019 amounted to 7.01% or 210,200 thousand rubles., in 2019-2020 - 42.70% or 1,370,634 thousand rubles.

General decrease in equity capital of KMZ JSC in 2018-2019 amounted to 71,155 thousand rubles. or 3.45% due to the resulting loss in 2019, in 2019-2020. equity increased by 0.07% or 1457 thousand rubles. for the capitalization of net profit in 2020.

Significant increase in the cost of sources of funds of KMZ JSC in 2019-2020 was associated with an increase in liabilities (both long-term and short-term ones): in 2020, a long-term loan (185,834 thousand rubles) and a short-term loan (262,022 thousand rubles) were received. In addition, accounts payable increased: by 10.98% or 42 035 thousand rubles. in 2018-2019, and by 17.99% or 76 392 thousand rubles. in 2019-2020. It should be noted that the growth of liabilities will negatively affect the financial condition of the enterprise.

Non-current assets account for the largest share in the structure of assets: 65.17% in 2018, 68.17% in 2019 and 69.34% in 2020, which fully justifies production activities, which are usually associated with a large diversion of capital to production security means of labor. The share of current assets in the analyzed period gradually decreased from 34.83% in 2018, to 31.88% in 2019 and to 30.66% in 2020.

Let us also analyze the structure of sources of financing the activities of the production enterprise KMZ JSC, highlighting the share of equity and the share of obligations (borrowed capital). The results of this assessment are presented in table 6.

As for the sources of financing the activities of KMZ JSC, in 2018 the enterprise had a high provision with its own capital, whose share was 68.72%. In 2019, the share of equity due to losses decreased to 62.0%, in 2020 - to 43.48%. Thus, the company's dependence on external sources of financing activities is increasing: the share of short-term liabilities increased from 12.76% in 2018 to 22.41% in 215 and a further increase to 24.50% in 2020; the share of long-term liabilities decreased from 18.52% in 2018 to 15.59% in 2019 and further doubled to 32.02% in 2020. Thus, the share of equity capital of KMZ JSC was at the level of 68.72% –43.48% in 2018–2020, the share of borrowed capital was 31.28% –56.52% in 2018–2020.

Thus, at present, the following conditions have been developed for the Ural region:
- loans, payables;
- solvency;
- financial instability;
- lack of equity.

Results

The study showed that there are various methods for assessing insolvency, which are used to calculate the probability of the occurrence of the risk of insolvency of enterprises, according to the developed criteria. In practice, today several types of techniques are used, which have their own distinctive features. The historical aspect of the occurrence is presented in table 1.

Initial use / Year of development	The name of the developed methodology for assessing solvency
1	2
1909 year to present	Rating Models Moody's
1916 year to present	Rating Models S&P
1924 year to present	Rating Models Fitch
1868	Z- Altman model
1977	Model Zeta
1999	The technique of Dontsova and Nikiforova
2000	Moody's KMV RiskCalc v1.0
2010	Moody's KMV RiskCalc v3.1 Russia
2011	Sinelnikova Model
2011	Interfax Business Intelligence Model
2013	Interfax Financial Risk Assessment Model

Tabl. 1. The evolution of methods for assessing solvency

One of the first models developed by Edward Altman, a professor of finance at New York University, the "Z-model", as the author called it, arose in 1968 and became really one of the most used in practice and successful for assessing the solvency of the enterprise. The "Z-model" allows you to assess the likelihood of a company default on the basis of calculated financial indicators. On its basis, other scientists began to develop new models based on the analysis of indicators, the informational basis for the calculation of which was represented by accounting data. The Altman model was developed using multiple linear discriminant analysis, which allowed the selection of significant variables. Its construction consists in the process of sequential inclusion and exclusion of variables in the model in order to improve its prognostic ability.

Initially, the model included 22 variables, 22 different financial factors. The choice of financial factors for the model was made on the basis of discriminant analysis of 33 "good" companies and 33 "bad" companies. The variables with the least statistical significance were excluded from the model, after which the analysis of the significance of the variables was repeated.

As a result, the model began to include only five significant variables, presented in Table 2.

Factor variable (x_n)	The average value of the group of insolvent companies, %	Sustainable Group Average, %	F-statistics
Equity / Total value of assets	- 6,1	41,4	32,60
Retained earnings / Total value of assets	- 62,6	35,5	58,86
Profit before tax / Total value of assets	- 31,8	15,4	26,56
Market value of capital / Балансовая стоимость обязательств	40,1	247,7	33,26
Выручка от продажи / Total value of assets	150	190	2,84

Tabl. 2. Assessment of factors used in the calculations of Altman

Elimination of the fifth variable has already led to a decrease in the predictive ability of the model. Based on this fact, it was concluded that the discriminant five-factor function has the greatest prognostic power. Imagine a general view of the model:

$$Z = 1{,}2x_1 + 1{,}4x_2 + 3{,}3x_3 + 0{,}6x_4 + 0{,}999x_5, \quad (1)$$

where   Z – solvency index;
xn – value n- factor.

According to the results of the analysis revealed that the critical values of the index solvency (Z) are set at 1.81 and 2.99. This means that those enterprises whose index value was determined to be less than 1.81 have a high probability of bankruptcy or default in the near future, such enterprises are categorically insolvent. For those enterprises for which the solvency index (Z) was determined to be more than 2.99, the probability of bankruptcy or default is low, such enterprises are classified as financially stable. If the solvency index assumes a value between 1.81 and 2.99, it is difficult to predict the likelihood of a default occurring.

The approach of the model is to classify companies into two groups: companies that are unconditionally insolvent, and companies that are financially stable.

The results of enterprise testing have led to the conclusion that Altman's "Z-model" provides a more accurate forecast of the likelihood of an organization defaulting in the course of one to two years. But it is possible to apply it only to large enterprises that compile a full set of financial statements (small enterprises submit a simplified version of the balance sheet and a report on financial results, and do not make an appendix to these reporting forms, due to which there is a difficulty in accessing data for analysis) . Therefore, it is advisable to supplement the solvency assessment with an analysis of cash flows, which will provide a real picture of the amounts received and spent cash, identify the risks of cash shortages by a certain date and allow you to develop a schedule of receipts and payments for cash flow management. Thus, the hypothesis that the analysis of cash flows will assess the risks of insolvency.

Let us evaluate the capabilities of the analysis and assessment model of insolvency risk in relation to a manufacturing enterprise, present the rationale for the goals of each direction in the proposed model, the coefficients used (table 3).

Direction of analysis and assessment of insolvency risk	Purpose of analysis	The composition of the coefficients
1	2	3
1. Assessment of balance sheet liquidity and calculation of liquidity ratios	Group assets by the rate of conversion into cash (and liabilities by the degree of urgency of repayment of obligations) to characterize the security of the most liquid assets, determine the possibility of repayment of the most urgent obligations	1.1. Grouping assets by liquidity: A1 – absolutely liquid assets; A2 – fast-selling assets; A3 – slow-moving assets; A4 – hard-to-sell assets. 1.2. Grouping of liabilities by the degree of urgency of repayment of obligations: П1 – most urgent obligations; П2 – current liabilities; П3 – long-term obligations; П4 – permanent liabilities. 1.3. Liquidity ratios: absolute liquidity; intermediate (urgent) liquidity; current liquidity.
2. Assessment of loss (recovery) of solvency	Determine the trend of decrease (increase) in current liquidity	2.1. Solvency loss ratio; 2.2. Solvency recovery ratio; 2.3. Factor analysis of current liquidity.
3. Assessment of current assets turnover	Determine the efficiency of resource use by the enterprise by calculating the duration of circulation of current assets	3.1. Current assets turnover ratio; 3.2. Cash turnover ratio; 3.3. Accounts receivable turnover ratio; 3.4. Accounts payable turnover ratio; 3.5. Inventory turnover ratio.
4. Cash flow liquidity assessment	Determine the sufficiency of the cash flow for all settlements and payments	Liquidity ratios: 4.1. Cash flow from current operations; 4.2. Cash flow from investing operations; 4.3. Cash flow from financial transactions; 4.4. Total cash flow; 4.5. The total cash flow, taking into account the cash balance at the beginning of the period.

5. Cash Flow Evaluation	Determine the possibility of forming an enterprise free stock of cash on a certain date after all settlements and payments	Performance ratios: 5.1 Cash flow from current operations; 5.2. Cash flow from investing operations; 5.3. Cash flow from financial transactions; 5.4. Total cash flow.
6. SWOT analysis in terms of insolvency risk	Determine the company's ability to repay existing obligations, identify threats, insolvency risks and outline ways to reduce them	6.1. Strengths based on solvency analysis; 6.2. Weaknesses; 6.3. Possibilities of the enterprise regarding timely repayment of obligations; 6.4. Threats to insolvency.

Tabl. 3. Model analysis and assessment of the risk of insolvency of the enterprise

Perhaps the most important in the proposed assessment model is the analysis of cash flows, and its relationship with the balance sheet in terms of assessing the sufficiency of liquid assets to repay liabilities. Therefore, it is proposed to analyze and assess insolvency risk not only according to the account balances on which the balance sheet was drawn up, but also using a cash flow statement that details the sources of cash inflows and the calculations made with their help.

The liquidity of assets and the urgency of repayment of obligations according to the balance sheet of the enterprise is determined approximately (after all, the balance is drawn up at a certain date and the level of liquidity may change depending on the duration of the analyzed periods). So, the liquidity of stocks depends on the turnover of each element in the structure of stocks, on the share of stale materials and finished products. The liquidity of receivables depends on the share of overdue payments in the general structure of receivables, the rate of repayment of debts, and the share of buyers unrealistic for collecting debts in the total debtors' debt structure. An increase in the share of overdue receivables and illiquid stocks indicates a decrease in the liquidity of current assets. For these reasons, an enterprise may have a high level of liquidity ratios, but in reality be insolvent. Therefore, it is very important to supplement the balance sheet liquidity assessment and the calculation of liquidity ratios with an analysis of current assets turnover.

Conclusions

According to the results of the study, we can draw conclusions about the achievement of its goals and objectives, namely:

1) the approaches of various authors to the basics of analysis and assessment of the risk of insolvency of an enterprise are disclosed.

Solvency of an enterprise is its financial ability to meet the payment requirements of suppliers of equipment and materials in full and in full in accordance with contractual obligations, repay bank loans, pay salaries to staff, and make obligatory payments to the budget and extra-budgetary funds. Thus, insolvency is a failure to fulfill the above obligations. The causes of the risk of insolvency or financial insolvency can be divided into three groups:

a) lack of desire to fulfill current obligations;

b) the lack of cash or liquid assets by which these obligations can be repaid;

c) improper use of working capital (the formation of large amounts of receivables, which increases the risks of its transition to overdue debts, the overstatement of the usual need for stocks and the formation of stocks of raw materials in stock, etc.);

Analysis and assessment of business risks, including the study of insolvency risk, are considered in the work of many scientists. But a complete analysis technique was presented only by D.S. Kudryavtsev, and only on the example of small businesses and from the standpoint of assessing the solvency of counterparties, and not the enterprise itself.

The author of this study concluded that it is advisable to supplement the solvency assessment with an analysis of cash flows, which will provide a real picture of the amounts of cash received and spent, will identify the risks of cash shortages by a certain date and develop a schedule of receipts and payments in order to manage cash flows;

2) the necessity of developing a model for analyzing and assessing the risk of insolvency of an enterprise, an algorithm for its application, is substantiated.

An analysis of the theoretical approaches of various authors, presented in the work earlier, made it possible to formulate the author's own position regarding the methodology for analysis and assessment of insolvency risks, and to develop a model of this area of financial analysis in relation to a manufacturing enterprise. The proposed model includes the following areas of analysis and evaluation:

a) assessment of liquidity balance and calculation of liquidity ratios;

b) an assessment of the turnover of current assets;

c) assessment of liquidity and cash flow efficiency;

d) assessment of loss (restoration) of solvency;

e) SWOT analysis, identifying risks of a decrease in the liquidity of the enterprise;

3) testing of an improved methodology for the analysis and assessment of the risk of insolvency of the enterprise on the example of JSC "KMZ"

The adoption of this Concept is designed to achieve the following results:

a) timely analysis of the solvency of the enterprise and the identification of threats to reduce it;

b) the development of managerial decisions aimed at restoring solvency or increasing it upon reaching established liquidity standards, as well as increasing asset turnover and financial performance on this basis.

Assessment of the financial condition of JSC "KMZ" according to the financial statements for 2014-2016. showed the following:

a) increases the security of both non-current and current assets necessary for the production activities of the enterprise;

b) the main source of financing assets became liabilities (loans, payables), the share of equity for the period 2014-2016 decreased almost twice, which negatively affects the financial stability of KMZ JSC;

c) the situation with absolute and intermediate liquidity is extremely difficult, only in the long term will KMZ JSC be able to repay its short-term liabilities (it is also taken into account that the balance sheet drawn up at the end of the year may not include large cash balances on the company's accounts)

The main problems in the activities of KMZ JSC, to which management impact should be directed, were identified as follows: a high share of stocks (in particular, finished goods in stock) and receivables in the assets structure of KMZ JSC and a low level of absolute and intermediate liquidity . The solution to these problems within the framework of the liquidity management concept was proposed in two ways:

a) a reduction in inventories in terms of the sale of 50% of finished product balances in the warehouse (at the same time, 50% of finished products in the production program are included with an advance payment of 50%);

b) the use of factoring to repay short-term receivables and change the terms of circulation of receivables.

The reduction of the part of the finished product balances in the warehouse will change the asset structure of the production plant of KMZ JSC, increase the cash supply, the level of absolute liquidity of KMZ JSC and the liquidity of its balance sheet.

Selling accounts receivable into factoring of PJSC Promsvyazbank in the amount of 70% of the amount of available receivables of KMZ JSC with a commission of 9.5% will increase the turnover of accounts receivable from 46 days to 13 days in the 2025 plan.

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Chapter 9

Current child protection standards

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Dimension of social and legal protection in the context of the analysis of legal rules in Slovakia

Abstract. We are all part of a broad community of people, does not matter, whether bond relational or within some other connection. The unique bond is, however, a natural close family relationship, which is based on the family, as the basic community. Bonds, that are formed in the family, constitute a primary basis and a social functionality of the relations not only in terms of law - the formal legal rules, but also in terms of other informal rules. In our contribution we will focus on an informal as well as formal bonds in family relations, on analysis of legislation regulating these relations, their structure of liability, particularly in relation to minors. By protection of the rights of children, who can be considered as the most vulnerable group, despite of the wide range of legislation, in practice disproportions occur, which confirm the weaknesses in the application of legal rules, as well as rules of non-legal nature.

Keywords: family, child, law, social legal protection, educational measures, alternative care

Introduction

The principle of legal protection of children is identified in all areas of law with regard to the specific range of its interest. In the area of the Family law relations, that principle resonates primarily in the provisions of Act No. 36/2005 Coll. on the Family and on change and amendment of certain acts as amended (hereinafter refered to only as "Act No. 36/2005 Coll.") and

Act No. 305/2005 Coll. on social and legal protection of children and social guardianship, as amended (hereinafter refered to only as "Act No. 305/2005 Coll."), governing the right of minors to education, especially in the family environment. It can be concluded, that the basic legal status of minors is set up in Family law. We can not miss out, that there is a child protection legislation also within the Social security law, Criminal law, Labour law as well as within the legislation regulating education, health and so on. The attention has to be focused also on system of rules of the Administrative law and Civil law, used primarily by intervention of the competent authorities in time, in case of a threat or violation of the rights of minors (decisions of authorities of social protection of children and social guardianship, court decisions).

In particular, the cooperation between the experts, no matter whether from the area of law or related non-legal disciplines, streamlines the process of social protection of children. Due to this cooperation, the objective can be achieved, which is, mainly, functioning of the family as the natural and appropriate environment for the child's upbringing. Socially inappropriate environment usually affects and even can even negate efforts to reeducate the child. Even the positive influencing between the parents and children may lead to the reeducation. However, there are phenomena, which depide of the means of intervention do not bring any success, as far as the positive changes are concerned in their most complexed meaning.

Also in our contribution, we are focusing on interventional procedures, though which the undesirable events, which negatively affect the child development and education, might be prevented.

Law as part of the protection of rights and freedoms

The law is an integral part of the life of every person. It is an instrument that regulates relations throughout the society. It consists of a wide range of rights and obligations, which bind not only individuals, but also the whole society. Therefore and, it can be considered an integral part of our being and formation of behavior. Its effect causes the regulation of social relations, not only in terms of moral and ethical principles, but also in terms of enforceability of behavior in those relations.

The basic principles, which are applied within the law and each legal rule, are mainly the prinicples of legality, but also solidarity, subsidiarity, participation, social justice, and so on. The prinicple "What is not forbidden is allowed" confirms the binding force of law and legislation.

Various institutions and institutions that supervise the protection of the rights and freedoms of members of society are legitimated to enforce of law. According to the authors Kusin, Šebestová, Drábiková [4], between the morality and legal obligation exists discrepancy. The moral obligation is dependent on human subjectivity, that is on "ethically qualified moral will of the subject, which covers conscience; it not legally determined, but is determined by human qualities of moral will. Legal dimensions of responsibility are directed "out" into action, decisions defined by law. "

An individual, in relation to society, performs his basic functions and one of those functions is the reproductive function. The reproductive function is characterized by a social unit - the family, which is the basis of society and is under its protection. Family performs important functions, therefore there is given particular attention to the protection of the family in terms of law. Protection of the family is regulated within the international documents (the Convention on protection of children), adopted and ratified by the Slovak Republic, as well as national legislation of which has a particularly important role the Constitution of the Slovak Republic (hereinafter refered to only as "Slovak Constitution"). Slovak Constitution in Art. 41 guarantees the protection of family and gives particular attention to the protection of children and minors. This provision of the Slovak Constitution that governs the basic rights and duties of parents, the possibility of their limitations, as well as the right to assistance from the state. Other legal rules in field of family and children protection are within the legislation of lower legal force, in particular Act no. 36/2005 Coll. and Act no. 305/2005 Coll. and other legislation of a procedural nature (Act no. 71/1967 Coll. on administrative proceeding (Administrative Procedure Code), as amended, hereinafter refered to only as the "Administrative Procedure Code", Act no. 99/1963. - Civil Procedure Code, as amended, hereinafter referred to only as "CPC"). The importance of implementation the laws into practice by the children's rights protection is thus the direct realization via acceptance, as well as their practical application in the form of issuing individual legal acts. The fact that in Slovak republic, there is given a particular attention to the legislation on social protection of children and social custody, is documented and presented in a table of statistical indicators of the Ministry of Labour, Social Affairs and Family for the previous period 2010 to 2015.

The number of families and children in the reporting period of the years 2010 - 2014									
	2010		2011		2012		2013		2014	
	families	children	families	children	families	children	families	children	families	children
The number of new cases during the reporting year	26754	30376	22789	31802	21446	29159	20159	32990	21337	30357
The number of cases during the year for which Social protection arrangements have been made	128703	193257	121553	184079	120501	178240	78049	109503	59172	87560
The number of cases at the end of the reporting period	229640	342259	224432	338085	216466	325163	203664	292965	181203	255328

Dimension of social and legal the protection

The social and legal protection is presented by two concepts. The first part of the concept is social protection and the other part is legal protection. It refers to the protection of the relations within the society by the means of law. Specification of the concept of social and legal protection is stipulated in § 1 of the Act no. 305/2005 Coll. Quoted law defines social and legal protection of children and social guardianship as a set of measures and instruments which serves to 'ensure the prevention of crisis situations in the family, protection of rights and legitimate interests of children, prevention of deepening and repetition of failures in mental, physical and social development of children and adults and to prevent the rise of social pathological phenomena ".

Continuous link between the Act no. 305/2005 Coll. and in particular the Act. 36/2005 Coll., as well as other relevant legislation, not only in field of Family law (Administrative Procedure Code, CPC) shows its fixed linking the various sectors both public and private law. Above all, there is implemented the Convention on the Rights of the Child (hereinafter refered to only as "the Convention") within its provisions, as well as other international documents, for example The European Convention and the Convention on Protection of Children and Cooperation in Respect of Intercountry Adoption (Notification of the Ministry of Foreign Affairs of the Slovak Republic no. 380/2001 Coll.), Convention on the Civil Aspects of International Child Abduction (Notification of the Ministry of Foreign Affairs of the Slovak Republic no. 119/2001 Coll.), which the Slovak republic committed to respect and which documents guarantee the protection of the rights and interests of children. Therefore the Act. 305/2005 Coll. can be considered a product of the National Programme of social protection as a result of the conclusions of the Lisbon European Council in 2000 on the modernization of social protection systems.

Act no. 305/2005 Coll. is based on three basic premises. In the first premise, the protection of the child in line with his best interests in relation to the Convention, is guaranteed. Based on the Convention, which

has the character of an international document, in particular this document stresses the child's best interests. Stated principle implemented into all national laws of lower legal force, considers a family environment to be the universal model for the child. The family environment forms the emotional, moral, social and cultural basis of the child. The child in the family receives basic patterns of behavior, emotional stability and ability to shape healthy interpersonal relationships. The quality of family ties belongs to the fundamental determinants affecting child development. Changes of the values in the society, the rapid way of life, changing relations in the field of labour market, extreme mobility, cosmopolitan population, leaving the traditional wide family, too tolerant attitudes and so on, are the factors that contribute to the growth of negative phenomena in the area of family relations. Healthy family environment positively affects the child, while troubled family in terms of behavioral pathology affected by defects of the marital relationship, or family unable to emotional saturation, does not create an environment for social maturation of the child and his health interpersonal relationships. Despite of the fact, that the family is ontogenetic oldest context of human being, it is hard to substitute the natural family environment to children by any other form of care.

The goal of the second premise is the aim of the competent authorities to create a new environment for the children, who can not be brought up in natural family environment, in a quality of natural family enviroment. It is indisputable that the family and sibling bonds play in a child's life an important role. Selection of the substitute environment for a child, that would fully respect his best interests, as stated in the Convention, means selection of such a family environment that would remove any undesirable effects of a negative nature, which the child brought from the natural family environment. The best interest of the child, as a fundamental principle of the Convention, as well as the legal term "best interests of the child" contained in the legislation governing family relations has not been clearly defined until the amendment to Act no. 175/2015 Coll. has been adopted. By its nature, however, it presents the different elements that play in a child's life an important role, for example the possibility of the child to express freely its opinion on the matter, the possibility of contact with his close environment, healthcare, access to education, protection from violence and superiority of the family environment to substitute environment and so on. In conclusion, the best interests of the child shall be considered in terms of the

individual child's needs to create an environment that would saturate in addition to the basic needs, the specific needs of the child. Best interests of the child is to create an environment that would ensure his physical and mental health for the purpose of positive mental development, as well as the development of his personality, in area of morality, ethics, education and social relations. According to Art. 5 of the Amendment to Act no. 36/2005 Coll.:

"The primary factor by decision-making proces about the all matters concerning the child, is to consider his interest interest. When identifying and assessing the interest of the minor, shall consider in particular

a) the level of child care,

b) the safety of the child, as well as safety and stability of the environment in which the child resides,

c) protection of the dignity as well as mental, physical and emotional development of the child,

d) the circumstances related to the health condition of the child or a child with disabilities,

e) a threat to the child's development caused by infringement of his dignity and a threat to the child's development caused by affecting the mental, physical and emotional integrity of the person who is the child's close person,

f) conditions to maintain the identity of the child and to develop skills and talents of the child,

g) the child's opinion and possibility of its exposition to the conflict of loyalty and consequent feeling of guilt,

h) conditions for the creation and development of relationship bonds with both parents, siblings and other close relatives,

i) use of available resources to maintain the child's family environment when considering the interference with parental responsibility ".

Especially the inability to create these conditions in a natural family environment is creating the scope for upbringing and care by the subjects with the competence to carry out actions in accordance with the current legislation. Although the current legislation consider also institutions of insitutional care to be the alternate environments (personal care, foster care, institutional care), this form is rarely used. When choosing a suitable form of alternative care, it is necessary to proceed not only in accordance with the current legislation, but also very sensitive approach, at least in relation to the child and his rights, has to be

chosen, to carry out the actions in a way to avoid inadequate reactions of the child.

If the child is so intellectually (mentally) mature to be capable of assessing the importance of implemented measure, it is necessary to consider also the opinion of the child himself. Removing of the child from the natural family environment and his placement in institutional type of institution for social and legal protection and social guardianship, is used only if all other possibilities has been used to eliminate undesirable effects of family environment and other forms of alternative care would not be effective.

Within the third premise, it is necessary to focus on prevention, that means to prevent any undesirable effects that would result in defects of the physical, mental and social development of the child. Prevention is one of the most progressive, as well as the most commonly used instruments for the protection of children's rights. In terms of previous legislation, Act no. 195/1998 Coll. on social assistance as applied until the effectivness of thet Act no. 305/2005 Coll., the social prevention has been defined in § 5 as a "set of measures for preventing and eliminating the causes, broadening or repetition of failures in mental, physical or social development of citizens." The content of the mentioned provision is transformed into the § 1 ods. 1 of the current legislation. Forms of prevention are focused on both the search, correctional, rehabilitation, social reintegration activities, as well as the organization, programs and other activities to prevent family crisis situations.

Especially the area of family law relations it is characterized by one of the principles of law, the principle of solidarity. The principle of solidarity is stipulated in the Act. 36/2005 Coll. Solidarity between family members is a fundamental principle of its cohesion and it is not only a legal duty, but also a moral obligation of the family members. It is the relation between the subject of obligation and the corresponding beneficiary of the right to perform the duties set up by law. Solidarity between members of the family relations is considered to be a group solidarity. In the past, it was limited only to filiation. Those are the relations based on the family relations, becasue they are dealing with the problems of the family members, in contrary to inter-group, respectively global solidarity as for example the solidarity in social security. Solidarity is a product of moral maturity of its entities, as well as well as its social background - social inequality.

The principle of solidarity is stipulated in Art. 4 of the Basic principles of family law, which provides: "All family members have an obligation to help each other and according to their ability and capacity to provide improving the material and cultural standards of the family." The article in question of the fundamental principles is transformed into other provisions of Title III of the quoted Act, where there the solidarity in the family relations is clearly defined in § 19. The Act in that provision already by the marriage set up the obligation of the spouses to satisfy the family's needs jointly and severally. Family solidarity, which is the solidarity in relation to the close person, does not solve only a problem of the individual, but also a problem of whole family. In the given case it is the primary solidarity, because family members know each other, they have to each other close family relations that come out from the family ties. The family is not only a center of primary solidarity, but also the secondary solidarity, which is dependent on the structure of interpersonal relationships and the society as a whole (volunteering, on the other hand the social security law system - insurance system, state social support, social assistance).

Important role in area of solidarity has also the upbringing of the children. Prosocial behavior should be built from an early ages of child. Therefore the family environment can be considered to be a fundamental pillar in which the child acquires skills of pro-social behavior - sharing of the common toys, solidarity bonds of the parents and grandparents and so on.

Solidarity, as a fundamental principle in every social formation, however, is not limited only to close persons, but above all to the whole society. According to Giddens the solidarity shall be built on three pillars, namely the state, the market and the civil society Keller [3].

In our opinion, the ideal state of society would have been identified in relation to solidarity, provided that solidarity is not determined by reciprocity.

Author sees the quality of pro-social behaviour in mutual cooperation of the three components of responsibilities, what leads to self-regulation. He can not therefore be considered as an advocate of regulation only via legislative actions done by the state. Despite the various differences of opinion there is no question that the state is the main guarantor, who has an obligation to support vulnerable groups in society, including in particular families with minor children, persons with health

disabilities and other groups which are most dependent on secondary solidarity.

Economic security of families is one of the important factors that affect the smooth functioning of the family. The bad economic situation of the family raises tensions. The unfavorable economic situation in the family arises due to the family and work imbalance. Čavojská [2] in the category of disadvantaged jobseekers, dependent on active labor market policy, includes also the jobseekers caring for children before the end of compulsory education. Unemployment of a parent or even both parents is not only the result of the malfunctioning of ensuring the basic needs of the family, but causes undesirable tensions in family relationships, which may lead into alienation. This condition is a significant contributor in formation of negative educational environment, what is the cause, but also a result of when the competent authorities of child protection and social care have a duty to intervene in the parental education and child care. According Bánovčinová [1] researches „(e.g. Dogde et al, 1994; Gedbery, Bodnárová and Filadelfiová, 2007; Currie and Stabile, 2003, etc.)" showed that poverty and its consequences in the family affect the ability of parents "to enter into a warm and encouraging interaction with their children and increase the risk of negative or punitive behavior". It may be said that in the economic situation of the family shall not be held responsible only family members, but also state, that affects the functioning of the family through its social and family politics. On the other side, the family with its biological function affects the population policy of the state within which to deal with current demographic problems.

Preventive measures, the mean of protecting children's rights

Pavelková and col. [6] defines upbringing as "right and duty to govern the conduct of a child, to use the appropriate means in order not to affect the dignity of the child and in any way harm his health, his mental, physical, emotional, intellectual and moral development, and to exercise supervision over the child corresponding to the degree of his development." The law understands under the term upbringing, the development as physical as well as mental abilities of the child. Upbringing, however, is a wider range of rights and duties, compared with personal care, which provide the child with basic needs. The term upbringing consists, in addition to the normal needs of the child, of granting the right to emotional development, intellectual development, health care,

influence its behavior, child care and education, decisions about the child, as determined by Art. 41 of the Constitution, § 178 paragraph. 1 CSP, as well as Art. 29 paragraph. 1 of the Convention on the Rights of the Child.

Therefore, a proper attention is given to the upbringing not only in therms of theory, but also in terms of legislation in force. Despite all the efforts, in the natural family environment, it is necessary to take measures, that is such interventions in favour of the child, which will eliminate the negative impact of some of the family members or the family as a whole. If necessary and if it is in the interest of the child, it can be used as one of the types of measures aimed at isolating the child from negative influences (in the case if the child is left without any care, danger to life or health of a child - torment, abuse).

But this is a breach of the rights of the child only unless clearly necessary, because modern progressive trends have their place also in protecting the interests of the child, which can be confirmed by finding new, but also the upgrading of existing educational methods and programs enshrined in existing legislation (Act no. 305 / 2005 Coll.). Given the practice is questionable whether it is desirable to create differentiation criteria for creating new concepts of educational programs, which form the basis for the preventive protection of the child in the framework of existing legislation. By setting criteria for the evaluation of educational programs for the purpose of removing the social causes of the failure of those responsible for the upbringing of the child, the level of protection of children's rights should be increased, as illustrated by the data of the survey of the table of the Ministry of Labour, Social Affairs and Family of Slovak republic.

Group programs										
		2010		2011		2012		2013		2014	
		the number of children	the number of involved parents reps. persons who personally caring for a child	the number of children	the number of involved parents reps. persons who personally caring for a child	the number of children	the number of involved parents reps. persons who personally caring for a child	the number of children	the number of involved parents reps. persons who personally caring for a child	the number of children	the number of involved parents reps. persons who personally caring for a child
Educational group program		222	75	215	120	192	114	298	264	283	119
thereof	undertaken by the office	12	0	9	0	0	0	6	6	7	0
	undertaken with the alternative care	210	78	206	120	192	114	292	258	276	119
Social group program		154	66	239	199	251	142	145	98	186	36
thereof	undertaken by the office	10	6	0	0	0	0	0	0	23	0
	undertaken with the alternative care	144	57	239	199	251	142	145	98	163	36
Eduacational and recreational group program		765	298	820	486	708	342	614	361	518	177
thereof	undertaken by the office	25	59	24	0	0	0	0	0	16	0
	undertaken with the alternative care	740	277	796	468	708	342	614	361	502	177

We can conclude, that the fault behavior in individuals is influenced by biological premises, that is the genetic equipment, family environment, as well as the fact that parents are not able to fully fulfill their parental role, but also the social environment (its value system, the nature of ideology, economic potential) that either with its tolerance or negative impact disrupts or hinders the normal child development. Authors Olah and Roháč [5] place importance on the protection of minors in educational, legal, psychological and sociological aspects. Both legislation and practice prefer preventive measures to repressive measures to protect the rights of minors.

For implementing preventive measures it is necessary for its implementation also the material means, in addition to professional supervision. Prevention is dependent on state power, market and civil society, as well as on the forecast of the institution concerned, which deals with those issues. To create the balance between the governmental, the private and the non-profit sector and to begin its active participation in running the prevention programs on child protection and co-creation of the conditions for the implementation of preventive measures, it is essential to have a financial coverage. It is necessary to support the efforts of individuals to solve the current problems of the Society. Problems of families with minor children are enhanced by new phenomena such as unemployment, low income, lack of access to housing, one of the parents work abroad and other objective causes that threaten the integrity of the family and thus the upbringing and care of children.

Although terms of the legislation in force, the conditions for the protection of children's rights from a methodological point of view, within the forms and methods, and the approaches to work with children at risk of social pathological phenomena has been improved, it can be be observed imbalance in respect of preventive measures as means to prevent these phenomena and repressive practices.

Causes, as well as the consequences can be sought precisely in insufficient economic conditions of families with minors, that do not allow them to visit organized free-time activities filling up the free time during the child's parents workload. Especially the of the centers is multisource. State participates in the financing of accredited centers, in amount of 80% of the proven costs.

Institutions with skilled professionals, who are working with young people constitute one of the main mechanisms of prevention among children. Therefore the activities within the competence of the state

policy towards youth shall be welcommed, which lead to the creation of leisure centers whose establishment, which establishment is governed by Act no. 282/2008 Coll. on support of the work with youth and on the amendment of Act no. 131/2002 Coll. on universities and on amendments to certain acts as later amended by the Act no. 375/2013 Coll. Funding

Despite all prentive measures, parents not always fulfill their parental duties in relation to minor children. The reasons may be of an objective as well as subjective character. The situation can be resolved by the decision of the authority for social protection and social guardianship ordering the educational measures in accordance with § 12 of Act no. 305/2005 Coll. or in accordance with the § 37 of Act no. 36/2005 Coll. The lawmaker determines the conditions under which the competent authority may impose educational measures to avoid the negative behavior of the the child, whose behavior violates the rights of others, that are, the individuals or society as a whole, as well as the behavior of the child's parents that negatively affect child development. Parents or legal person to whom the child was entrusted to the personal care, as well as other individuals that interfere in education and child care, can influence a child's upbringing by thier conduct, but also by their passivity, that is, failure to perform their duties or abuse of their rights in relation to the child.

From the point of view of the procedures mentioned above, the competent authority, which is the Court, as well as the authority of child protection and social guardianship, may impose educational measures to the child or his parents or person holding the child in his custody by a court decision. The Act no. 36/2005 Coll. within the provisions of § 37 may order given educational measures so that:

- "Shall warn young child, his parents and individuals whose behavior threaten or interfere the child's proper upbringing in appropriate manner,

- Decide about the minor's upbringing supervision; supervision is carried out mainly in cooperation authority for social and legal protection of children, municipalities, schools, non-governmental actors and institution in which the minor child is placed,

- impose to a minor child restriction in a limited extent necessary for the prevention andto avoid harmful influences which may endanger or disrupt his positive development; compliance of the imposed restriction is supervised by the cooperation of the municipality,

- impose to a minor child and his parents the duty to undergo social counseling or other expert advice. "

If necessary in the interest of the child, because the educational measures did not lead to reparation, the court shall take a child away from parents or person who has the child in his custody and shall order to stay for the period no longer than six months in a institution that provides the specialised diagnostics, or in case of drug or other addictions shall arrange a specilised help within the same time period in institution, which provides the re-socialization programs to implement a resocialisation programs.

Court is entitled to impose to the person responsible for the child's upbringing, a cooperation with the institutions and other entities that provide the social and legal protection of children, or other duty. Court monitors the effectiveness of educational measures in cooperation with all entities competent in the field (authority for social and legal protection and social custody, municipality, non-governmental body, the relevant institution).

Competences of the authority of child protection and social custody in the field of educational measures are stipulated in § 12 of Act no. 305/2005 Coll., as well as Act no. 453/2003 Coll. on state administration in the field of social affairs, family and employment services and on amending and supplementing certain acts as amended. The authority of social and legal protection of children and social custody can impose the following educational measures:

"a) warns, in an appropriate manner, the child, the child's parents or the person who has a child in custody, if their behavior may threaten or disrupt the positive mental development, physical development and social development of the child,

b) imposes to the child to undergo the diagnosis of specialized ambulatory care, if it is necessary to apply adequate measures of social and legal protection of children and social custody for children and the diagnosis can not be provided by other means,

c) imposes the duty to the child to participate in treatment in specialized ambulatory care,

d) imposes the duty to the child to participate in an educational program or social program. "

To the parents or to the person having a child in his custody, the competent authority for social and legal protection and social custody may impose a duty to cooperate with the institutions and other entities that perform social and legal protection of children, or other duty.

Warning of the child, child's parents or other person in whose care the child is, is an used educational measure for less serious violations of rights and duties. Professional diagnostics in specialized ambulatory institutions is used in case of defects of the behavior of the child, or the consumption of narcotics and psychotropic substances.

To the expert diagnosis is related also an other form of educational measure - treatment in specialized ambulatory care. It refers to the treatment of addictions in ambulatory institutions set up for this purpose.

The authority of social and legal protection and social custody can impose, the same as the court, a duty to cooperate with the relevant institutions, as an other appropriate duty in favour of the child's rights.

Participation in educational or social program is a commonly used measure in the case of a child who lives in unsuitable family environment, whether in terms of hygiene, social contacts and so on. The bodies of social and legal protection and social custody, which organize educational programs with an individual focus on specific excluded groups (Roma community, physically disadvantaged people and so on.) offer a child, as his parents specific activities that affect not only the child, but comprehensively the family as a whole. Educational measure may be carried out by the body social and legal protection of the child and social custody itself, municipality, as well as an accredited entity.

Division of competences in the field of educational measures between the court and the authority of social and legal protection and social custody may seem rebundand. It can not, however, omit to think about, what reason had the lawmaker when setting up this manner of distinguishing the measures adressed to the both parents, as well as to the child. Even the co-operation of the court with authorities of social and legal protection and social custody in tracking the effectiveness of educational measures ordered by the court itself, gives room for better implementation of educational measures.

The provision of the § 13 Act no. 305/2005 Coll. widens the circle of entities that may be involved in meeting the objectives of educational measures. In addition to the authority for social and legal protection and social custody, the municipalities, towns, cities and autonomous regions contributes to those measures as well within the defined competencies. It may also be an accredited entity, an individual or a legal person who has acquired competencies in the accreditation procedure.

Educational measures are more of preventive nature, although their punitive character can not be denied. A legal duty is to review the purpose of educational measures in the time period specified in the Act. If the competent authority finds that educational measures do not fulfill the purpose for which they were ordered, may restrict the rights of the child and his parents by some other measure.

Educational measures

	2010							2011						
	children	from that from the reason of the social custody from the column no.1	parents, or the persons who have the child in their care	imposed educational measures	cancelled: together in current year	from that from the column no.5 imposed in previous	Contribution of alternative care (number)	children	from that from the reason of the social custody from the column no.1	parents, or the persons who have the child in their care	imposed educational measures	cancelled: together in current year	from that from the column no.5 imposed in previous	Contribution of alternative care (number)
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
a) Educational measures imposed by the body of social and legal care and social custody (SPOD) according to the Act no. 36/2005 Coll. on family	431	323	214	326	162	36	102	233	159	200	202	168	93	64
Warning	202	149	166	164	85	21	2	105	80	130	105	99	45	3
Duty to take part in treatment in specialised ambulatory care	3	2	7	3	0	0	0	2	1	1	2	16	16	14
Duty to take part in educational or social program	207	167	0	151	73	13	100	100	68	67	79	47	29	40
Duty to undertake specialised diagnostics in specialised ambulatory care	10	5	15	8	5	1	0	16	10	2	16	6	3	7
b) Educational measures imposed by the SPOD according to the Act no. 36/2006 Coll.on family	358	227	266	258	199	116	9	312	193	194	223	145	84	15
Warning	111	102	131	104	74	46	1	87	84	86	74	64	38	0
Supervision	225	106	125	131	116	69	8	212	99	108	134	78	44	13
Restriction	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Duty to undertake social counseling and specialised advise in spec. institutions	22	19	10	23	7	1	0	13	10	0	15	3	2	2
Together educational measures imposed by the SPOD (a)+b))	789	550	480	584	361	152	111	535	352	394	425	313	177	79
c) Educational measures imposed by the court	605	215	267	348	199	129	41	748	345	334	497	232	179	17
Warning	33	7	37	12	2	2	3	64	49	38	48	8	4	6
Supervision	382	91	137	182	91	82	23	428	135	168	256	140	122	7
Restriction	3	2	2	2	2	2	0	1	1	2	1	0	0	0
Duty to undertake social counseling and specialised advise in spec. institutions	20	9	27	16	10	6	1	60	15	66	37	7	10	3
Stay in institution of specialised diagnostics	121	72	48	95	68	28	10	109	83	38	90	47	26	7
Stay in specialised institutions	16	8	6	12	17	5	0	45	28	12	31	17	8	0
Stay in resocialisation center for drug addicted people	30	25	10	29	9	4	4	41	34	10	34	13	9	0

	2012							2013						
	children	from that from the reason of the social custody from the column no.1	parents, or the persons who have the child in their care	imposed educational measures	cancelled: together in current year	from that from the column no.5 imposed in previous years	Contribution of alternative care (number)	children	from that from the reason of the social custody from the column no.1	parents, or the persons who have the child in their care	imposed educational measures	cancelled: together in current year	from that from the column no.5 imposed in previous years	Contribution of alternative care (number)
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
a) Educational measures imposed by the body of social and legal care and social custody (SPOD) according to the Act no. 36/2005 Coll. on family	374	197	266	255	176	59	75	394	179	136	247	159	60	80
Warning	231	111	184	159	120	37	14	267	85	126	152	110	38	4
Duty to take part in treatment in specialised ambulatory care	0	0	0	0	1	1	1	1	0	x	0	0	0	0
Duty to take part in educational or social program	132	77	72	87	51	21	58	117	87	x	85	44	22	75
Duty to undertake specialised diagnostics in specialised ambulatory care	11	9	10	9	4	0	2	10	7	x	10	5	0	1
b) Educational measures imposed by the SPOD according to the Act no. 36/2006 Coll.on family	334	193	148	228	141	78	5	479	162	34	243	123	59	9
Warning	84	68	59	59	58	34	0	70	35	29	49	33	16	2
Supervision	211	86	71	131	71	38	5	378	119	x	164	86	42	4
Restriction	0	0	0	0	1	0	0	0	0	x	0	0	0	0
Duty to undertake social counseling and specialised advise in spec. institutions	39	39	18	38	11	6	0	31	8	5	30	4	1	3
Together educational measures imposed by the SPOD (a)+b))	708	390	414	483	317	137	80	873	341	170	473	282	120	76
c) Educational measures imposed by the court	799	347	88	541	257	152	22	696	320	71	489	195	130	24
Warning	25	22	24	30	6	3	0	21	9	12	14	5	1	0
Supervision	517	139	14	293	132	97	5	424	153	x	263	99	75	12
Restriction	0	0	0	0	0	0	0	1	1	x	1	0	0	0
Duty to undertake social counseling and specialised advise in spec. institutions	59	8	50	37	22	11	4	79	18	59	68	18	13	2
Stay in institution of specialised diagnostics	111	97	0	101	56	19	5	83	72	x	70	36	16	3
Stay in specialised institutions	27	23	0	24	16	6	1	28	18	x	20	15	5	1
Stay in resocialisation center for drug addicted people	60	58	0	56	25	16	7	60	49	x	53	22	20	6

Educational measures						
	2014					Contribution of alternative care
	number of					
					cancelled educational	
children	from that from the reason of the social custody from the column no.1	parents, or the persons who have the child in their care	imposed educational measures	together in current year	from that from the column no.5 imposed in previous years	number
1	2	3	4	5	6	7
a) Educational measures imposed by the body of social and legal care and social custody (SPOD) according to the Act no. 36/2005 Coll. on family	375	277	62	239	149	79	106
Warning	193	139	62	119	97	42	2
Duty to take part in treatment in specialised ambulatory care	0	0	x	0	0	0	0
Duty to take part in educational or social program	174	130	x	112	47	34	104
Duty to undertake specialised diagnostics in specialised ambulatory care	8	8	x	8	5	3	0
b) Educational measures imposed by the SPOD according to the Act no. 36/2006 Coll.on family	425	273	46	209	134	81	3
Warning	65	60	32	52	39	15	0
Supervision	339	196	x	137	86	61	2
Restriction	1	1	x	1	1	0	0
Duty to undertake social counseling and specialised advise in spec. institutions	20	16	14	19	8	5	1
Together educational measures imposed by the SPOD (a)+b))	800	550	108	448	283	160	109
c) Educational measures imposed by the court	709	469	36	471	200	144	7
Warning	27	24	10	18	10	6	0
Supervision	470	273	x	267	105	87	5
Restriction	0	0	x	0	0	0	0
Duty to undertake social counseling and specialised advise in spec. institutions	66	27	26	53	30	22	2
Stay in institution of specialised diagnostics	90	90	x	80	34	14	0
Stay in specialised institutions	13	13	x	10	6	3	0
Stay in resocialisation center for drug addicted people	43	42	x	43	15	12	0

Educational measures can be considered as preventive measures to prevent the exclusion of the child from the family environment, as illustrated by the table and the number of ordered forms of educational measures in relation to both the parents as well as minor children.

Institutional care - a form of alternative care

From the current legislation it is clear, that the authority of social and legal protection and custody is obliged to provide all conditions for proper physical and social development, especially there where the family environment failed to the extent that it is at risk of physical and mental development of the child and from this reason the "solution of the child care can not be postponed "(§26 paragraph. 2 of Act no. 305/2005 Coll.). As a threat it is considered also the fact that the child is left without any care of parents, legal guardians or persons established by a court decision. Placement of children outside the biological families is a measure of social protection if all other options to avoid negative impacts on the child has already been used.

With the court decision on placement of the child outside the family environment does not end the duty of the authority of social and legal protection and social custody to work with the family of the child and to participate in the rehabilitation of the family environment in order to return the child back to the natural family environment. The statistical data shows that the selection of a particular institution for the placement of children under the implementation of the court decision is given by law in force. However, the court on the basis of documents, finding out the real situation of the case, shall deside on the particular form and particular institution to which the child is placed.

Court when deciding about the custody of the child takes into consideration factors such as sibling ties, but also to the fact that affects parental contact with the child after placement (distance of the institution from the parents) in order to maintain family ties.

	2011						2012						2013						2014					
	to the January 1 of the year considered	the number of new placements of children	termination of the care	situation to to December 31 of the year considered, the number of children together	number of visits in the families during the custody care in institutions)	the number of visits in institution	to the January 1 of the year considered	the number of new placements of children	termination of the care	situation to to December 31 of the year considered, the number of children together	number of visits in the families during the custody care in institutions)	the number of visits in institution	to the January 1 of the year considered	the number of new placements of children	termination of the care	situation to to December 31 of the year considered, the number of children together	number of visits in the families during the custody care in institutions)	the number of visits in institution	to the January 1 of the year considered	the number of new placements of children	termination of the care	situation to to December 31 of the year considered, the number of children together	number of visits in the families during the custody care in institutions)	the number of visits in institution
Crisis centers	166	337	199	223	584	515	254	356	146	279	575	558	273	336	171	241	450	570	222	329	131	258	212	391
Resocialisation centers	38	40	33	45	111	90	43	62	42	60	143	120	60	51	52	63	103	169	53	49	42	59	50	128
Diagnostic centers	40	73	54	43	111	90	46	101	61	75	171	130	60	67	72	42	141	110	30	62	41	38	62	58
Homes of social services	344	3	51	290	349	342	231	0	50	182	273	368	181	3	36	147	236	208	149	0	39	109	116	171
Foster homes	4098	887	999	4033	5326	4471	4266	967	1007	4358	5992	8777	4342	936	1015	4426	4359	8129	4280	790	866	4351	3002	8330
Reeducation centers US	626	177	252	565	1136	949	537	197	199	565	1108	1086	552	162	197	530	946	981	510	152	237	439	843	807
Reeducation centers OV	45	45	10	57	89	86	53	13	19	52	115	107	54	10	21	42	66	61	43	15	16	39	47	52
Institutions for the exexution of the decision together	5357	1579	1598	5256	7704	6550	5430	1696	1524	5571	8377	11146	5522	1565	1564	5491	6301	10228	5287	1397	1372	5293	4332	9937

§ 54 of the Act no. 36/2005 Coll. regulates institutional care with taking into account the interests of the child. The quoted legislation in § 54 in paragraph 3 stipulates that "a serious threat or serious disruption of upbringing of the minor are not considered poor housing conditions or financial circumstances of the parents of a minor child."

This is a new provision amended with effect from 1/1/2016 within the recodification of Act no. 36/2005 Coll., which does not consider a serious threat to be the problems with housing or financial situation of families, which undoubtedly has an impact on a young child. It may be discussed, however, whether inadequate housing, and economic situation indeed endanger the health and life of the child, that is whether those reasons can not be regarded as seriously endangering the child's upbringing. The actual practice shows that inadequate housing conditions and financial situation of families with minor children are involved in the health damage of minors, cause even their death (fires when using unsuitable radiators in unsuitable housing areas, poor housing conditions in shelters without heating, without heat insulation, unfavorable conditions for the preparation for school, truancy, etc.).

As already mentioned, law understands under the upbringing the development as physical as well as mental abilities of the child. The concept of upbringing is a wide range of not only rights but also duties of parents in relation to the child and to his needs. It is clear, that the term also includes the provision of adequate housing and nutrition and all needs related to the child's needs.

It is believed that it would be more acceptable if the lawmaker adds to the mentioned provision the phrase "unless the law provides otherwise", while subsequent provisions would regulate the conditions under which housing and financial circumstances are considered to be a serious threat or serious impairment of the child's upbringing. Existing provisions of the Act evokes an interpretation that parents can stay with a child in unhealthy and abusive conditions, also do not need to porvide a child any economic needs and thus they do not violate the right of the child to proper upbringing.

Perhaps the opinion can be expressed that the legislation and its application brings into the practice many question marks, whether its provisions are consistent with the best interests of the minor child and that just under a misinterpretation can violation of children's rights happen.

Conclusion

Legislation and practice confirms that a healthy family climate is essential for a smooth and trouble-free child development. Therefore, the effort to current legislation in the field of social and legal protection also ensures a family environment that will meet all legally required attributes of the proper upbringing of the child. Another considerable element, which in addition to the family environment influences the child's upbringing, is the wider environment in which the child resides. Therefore reflection of the wider environment (school, leisure activities, cultural events, as well as groups with risk behavior) in which the child moves, can be as positive as well as negative factors for his upbringing and may even be a risk factor due to the nature of the group.

In this context it should be mentioned that the Family Act and the Act. 305/2005 Coll. authorise to execution of parental righs both parents, regardless of whether they are married or not. The Society puts this condition to the both parents, despite the fact that a healthy family environment may be at risk if the parents do not live together. Common household of the parents, as the most suitable model for raising children, may be disturbed also by the legitimate factors, such as work of one of the parents and thus the absence in the family because of the distance of the work place from the place of residence, but also disturbed family environment because of the child's parents divorce. In particular, the divorce is an intervention into the family environment, which is for a child difficult to accept.

To the competent authority for social and legal protection of children and social custody are obliged to examine whether by parents or at least by one of them there are conditions for the proper upbringing of the child. When deciding on the child's upbringing, the court relies mostly just on the opinion of the authority for social and legal protection and social custody, which has a duty to examine the conditions in which the child is raised in the terms of evidence.

From the present perspective, it is clear that the competent authorities of sociald legal an protection and social custody and the court will deal carefully with the issue of examining the environment in which the child will grow up. The most important question is, who is the best person for the child's upbringing, whether both parents or one of them, alternatively another individual who will be responsible in terms of law for the upbringing of the child.

Given the complexity of view, from the content of thr contribution it is clear, that the Society has sufficient legislative and other means of guaranteeing the respect of the rights of minors.

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Additional list of applied legal rules

The Convention on the Rights of the Child published a notice in the Official Journal in form of The Notice of the Federal Ministry of Foreign Affairs under no. 104/1991 Coll.
The Constitution of the Slovak Republic Act no. 460/1992 Coll. as amended
Charter of Fundamental Rights and Freedoms was adopted by the Federal Parliament of the Czech and Slovak Federal Republic through Constitutional Act. 23/1991 Coll.
Convention on Protection of Children and Cooperation in Respect of Intercountry Adoption (Notification of the Ministry of Foreign Affairs of the Slovak Republic no. 380/2001 Coll.)

Convention on the Civil Aspects of International Child Abduction (Notification of the Ministry of Foreign Affairs of the Slovak Republic no. 119/2001 Coll.)

Act no. 36/2005 Coll. on Family and change and amendment of certain acts as amended

Act no. 305/2005 Coll. on social and legal protection of children and social custody as amended

Act no. 71/1967. on administrative proceedings (Code of Administrative Procedure), as amended

Act. 99/1963 Coll. - Code of Civil Procedure, as amended,

Act no. 282/2008 Coll. on support of the work with youth and on the amendment of Act no. 131/2002 Coll. on universities and on amendments to certain acts as later amended Act no. 375/2013 Coll.

Act no. 453/2003 Coll. on state administration bodies in the field of social affairs, family and employment services and on amending and supplementing certain acts as amended

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