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MODERN ASPECTS OF TEACHER'S PROFESSIONAL CULTURE FORMATION: INFORMATION AND COMMUNICATION COMPONENT

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Abstract

In this article the authors describe special features of development of components of pedagogical culture (information and communication skills of a teacher). The results of this research demonstrate that nowadays upgrading and continuing education for professionals are among top priorities in the state politics and requirements of the society. The significance of the topic in question being proved theoretically, a practical research was executed studying effectiveness of teaching classroom application of information and communication technologies in the course of further education professional training of teachers (further education and retraining). The authors state the necessity to include in the curriculum practical modules, facilitating the skills of practical integration of information and communication technologies into the pedagogical process and development of professional culture. These modules specialize in teaching the mediation technique as a communicative skill in resolving conflicts in an educational environment and the technology of co-designing electronic teaching media as a technique of organizing educational and mentoring process. The results of the survey among the teachers, who participated in the programmes of further education, which incorporated the modules, created by the authors, confirm that the acquired skills facilitate development of professional culture and stimulate continuing education.

Keywords: Joint modelling, mediation, teacher's professional culture.

1. Introduction

Rapid development of contemporary education in Russia is highly supported by emerging expectations for a better quality of life and by the need for education as a social institution to maintain the level of competitive performance considering the progress of digitalization and globalization (Bylieva et al., 2018; Ivanova, 2016). These processes eliminate economical, social and cultural borders thus enhancing competition which calls for mobility and pro-activity of today's professionals. Therefore, a teacher constantly has to improve their marketable skills, partake in lifelong learning and the importance of educational systems development is highly stressed. The dynamics of social and cultural changes is a major influence on the world of education, leading to the necessary evolvement of a new brand paradigm of continuing education, which integrates constant revision, personalization of individual demands and methods to fulfil them. Development of cognitive and creative skills, need for professional culture evolution constitute a key feature of such education alongside with acquisition of knowledge and skills (Lomakina & Pisarenko, 2020; Serikov, 2011; Sergeev & Borytko, 2014).

Changes in social, cultural and economical sphere of life require a quality transformation of pedagogical activity on a professional level and higher mobility and openness of a teacher. The society wants a modern teacher to raise the implementation of the educational process to a drastically new level thus hilighting the problem of improvement of further education and that of development of professional culture of teachers within the system of post graduate training. It is evident that a today's professional is a successful and productive educational team worker, skilled in modern practical childcare and teaching, capable of timely adjustment in the environment of educational globalization, multitasking and changes. In other words this is a member of pedagogical culture, who is aware of traditional and new approaches in these fields of knowledge, familiar with background concepts of their professional activity (Oborotova, 2017).

High level of professional culture does not only utilize the new educational content to the fullest extent but also stimulates cultural interaction of all the participants of the educational process.

According to Svetlana Ivanova, modern pedagogical science "shall put an emphasis on the whole assembly of special features of the time of media and of contemporary post industrial globalizing world". Consequently, professional culture of a teacher is one of the main factors in establishing benchmarks, values, motivation, behavioural norms and teaching activity making it an integral part of improving the quality of the educational process.

The afore stated places the study of the contemporary aspects of formation and development of a teacher's professional culture under the processes of informatization and digitalization among the core problems of education development, which laid ground for this research.

Understanding the processes of formation and development of a teacher's professional culture in modern education constitutes the most popular trend of domestic and foreign research (Galton M., Doily V., Isaev I., Klarin M., Kodgaspirova G., Ponder G., Slastenin V., Serikov V., Fulean M. and others).

Contemporary research recognizes *axiological (value-based), operational (technical) and individual creativity* primary aspects of professional culture. Pedagogical culture also incorporates structural and functional components based on the principle of unanimity in cooperation. However, the diversity of definitions of structural components of pedagogical culture introduced by different authors,

such as Ermolenko M., Isaev I., Kukushin V., Mizherikov V., Stoliarenko A.and others, makes it possible to distinguish the following core functions of pedagogical culture: *gnosiological, humanitarian, communicative, educational, moral, standardizing, informational* etc.

Based on the above, a teacher's professional culture is considered a combination of a teacher's general culture and professional skills in all spheres of pedagogical activity: education, mentoring, ethics and aesthetics, economical, sociological, management aspects ans others as well as practical professional implementation of modern pedagogical technologies including information and communicative technologies.

We have invented a model of a modern teacher's professional skills (figure 1) which includes all of the described components and further emphasizes the need to equip a teacher with new psychological and pedagogical methods and techniques (Oborotova, 2015).
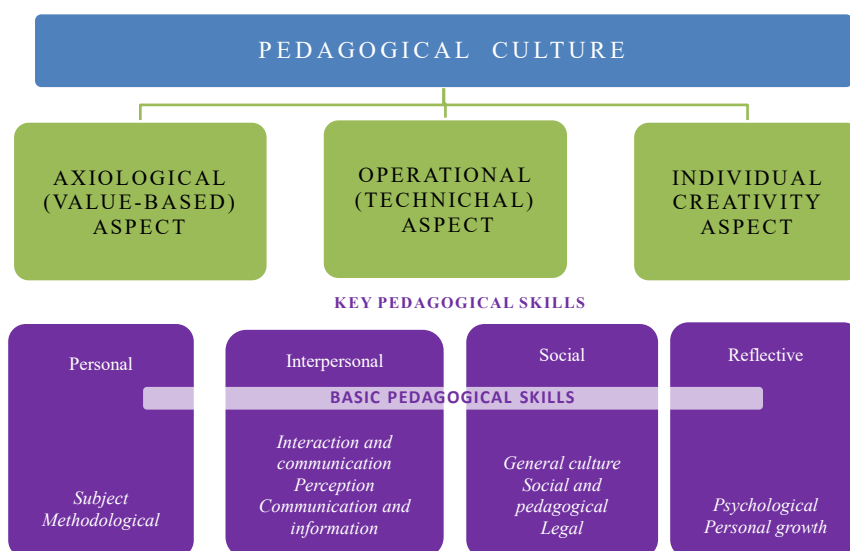
Figure 01. A model of the teacher's interpersonal professional skills

This research pays particular attention to the effectivity of learning such communication and information technologies as *mediation* (a technique of absolving conflicts in educational environment) and *co-design* (a technique of co-designing educational and mentoring process and a technique of co-designing electronic means of education).

Grasel, Meta, Oborotova , Pokhmelkina, Hertel, and Shamlikashvili define mediation as *an efficient technique of resolving conflicts in a society* (as cited in Kopoteva & Merzlikina, 2020); Reusser, Schon, Kopoteva, Logvinova, and Merzlikina view co-design as *a highly-productive, team-based process,* an effective development of professional skills while maintaining high-profile motivation at facilitation of innovative approaches in an organization and co-designing educational and mentoring process (as cited in Kopoteva & Merzlikina, 2020; Oborotova, 2017; Pokhmelkina & Semenov, 2008).

Acknowledging confirmed effectivity and high potential of modern information and communication technologies we deem it necessary to make them a part of teacher training programmes within the further education and retraining curricula.

2. Problem Statement

This research focuses on contemporary aspects of formation and development of a teacher's professional culture under the processes of informatization and digitalization of educational environment. In today's digitalized and modernized society the problem of raising the quality of professional education becomes a priority in its own right.

This highly concerns modern school which must demonstrate sufficient flexibility to adapt to constant changes, meet the requirements for effectivity of teaching and mentoring potential of the educational system in general, and supply "marketable professionals for the emerging "digital world"…" (Kolyhmatov, 2019).

Consequently, as contemporary researchers believe the key feature of the educational system to be the teacher, concentrating their activity on raising the quality of education and on making best effort to manage the implementation of new communication and digital technologies in their work, it is deemed necessary to facilitate the culture-inspiring function of today's education. In its turn this function increases the role and the importance of the teacher - a bearer of cultural traditions, who does not only provide the transfer of ready knowledge but also stimulates personal growth of their students and encourages their cognitive activity both as individuals and as members of educational and mentoring process (Kolyhmatov, 2019; Lomakina & Pisarenko, 2020; Osmolovskaya et al., 2019; Serikov, 2011).

3. Research Questions

These changes in social, cultural and economical life of the society require a different quality of professional teaching activity, better mobility and openness of the teacher and revision of the approaches to continuing education of teachers.

This leads to a range of questions demanding a profound answer:

- What additional skills make teachers marketable under the conditions of globalization and digitalization of education?
- Does this necessitate constant scientific and methodological support of the teacher?

Both foreign and domestic research has demonstrated that a teacher's activity inspires their personal growth. Being a subject of educational relations, a teacher communicates with all participants of educational and mentoring environment.

Contemporary educationalists show that development of a teacher's identity implies a continuous process, their growth stimulated by teaching and social experience.

Moreover, the results of monitoring prove that conflict can hardly be avoided when an individual pedagogical style is being forged. Conflicts arise in interaction with other subjects of educational activity and in the process of personal professional growth, whereas their timely settlement brings new

understanding of pedagogical identity and enables further professional development (Kopoteva et al., 2018; Oborotova, 2015; Pokhmelkina & Semenov, 2008).

4. Purpose of the Study

The questions raised here define the purpose of this research as a study of the potential of modern information and communication technologies (ICT) in the role of aspects of developing a teacher's professional culture within their further education.

More than 500 teachers (all stages of general education) from educational institutions in Moscow, Moscow region, Novosibirsk, Lipetsk and Lipetsk region partook in this research in the course of their corporate training with adjustable module programmes "Mediative Approach to Special Features of Interaction between Participants of Educational Process" (by S. Oborotova) and "Co-designing Technique for Electronic Teaching Media" (by I. Merzlikina). These programmes were implemented independently and incorporated in bigger blocks of further professional education curricula (retraining and further education) from 2010 to 2019.

While implementing the aforementioned modules, targeted for development of communication and information culture of employees in educational facilities, several paths were pursued:

1) further education and professional retraining of employees in educational facilities (educational psychologists, social care teachers and others);
2) learning under continuing scientific and methodological support;
3) self-teaching activities for teachers.

The goal of actual learning is developing information and communication aspect of pedagogical culture and acquiring skills, necessary for professional activity in the field of managing the educational process, such as *mentoring, educational, methodological, diagnostic, information and analysis, projects and research, innovation, management, counselling skills and others.*

The presented modules comprise theoretical and practical material, facilitating development of skills in application of information and communication technologies in the educational process and in improving professional culture. The training mainly aims to motivate continuing development of a teacher as a professional and as an individual, to master innovative technologies supporting an individual in the educational environment, essential for teaching practices in diagnostics, correction, proactive work engaging children, adolescents, young adults and adults, and also to provide techniques for educational dialogue in teaching.

5. Research Methods

This research used the following methods: generalization and analysis of the current experience, of modern teaching practices for implementing innovative technologies, which provide a way to appraise successfulness of development of a teacher's information and communication culture; generalization of the conclusions of methodological and pedagogical research in this province.

5.1. Special Features of Teaching the Technique of Mediation and Co-Design of Electronic Media

Training within the module course "Mediative Approach to Special Features of Interaction between Participants of Educational Process" has been decided effective for shaping and developing communicative skills, in particular, the skill to prevent and resolve conflicts within educational environment (mediation technique).

This module focuses on facilitating communicative skills including practical application of mediation technology when designing individual pedagogical activity with the purpose of successful implementation of educational and mentoring process.

The module curriculum comprises the topics defining mediation, describing distinctive characteristics of mediation activity and special features of its evolution in further education. Implementing mastering of mediation technique into further professional training programmes of teachers requires an absolutely different approach, calling for use of various interactive methods. Such interactive methods as interactive lectures and training, creative classes and educational games, case studies, teamworking techniques, i.e. brainstorming, working in small groups, discussion panels, forums etc., find application in this work.

Mediation is an efficient technique of resolving disagreements between different layers of co-workers in a big organization. Engaging this method encourages improvement of general atmosphere in the team, when each child, teacher and parent becomes more protected.

Facilitating mediation component in professional pedagogical culture targets developing new skills due to interaction in conflicts, rendering mediative help (intermediation when resolving conflicts) and also teaching this technique to children and their parents as well as work associates (when exchanging experience), providing them with a new efficient means of communication, based on the principle of positive cooperation.

In the course of further education classes teachers learn to take into consideration characteristics of domestic system of education, to improve the culture of social and school relations, to make use of other factors responsible for better effectivity.

The module "Co-designing Technique for Electronic Teaching Media"by I.V.Merzlikina was employed for shaping and developing information and communication skills. The module is based on the algorithm of improving teacher's professional culture: "TEACHER-ACTIVITY-STUDENT". The core of the method of this author is development of teacher's professional culture in the field of application of information and communication technologies in the educational dialogue.

The best form for such activity is a system of classes incorporating different stages of teaching children to co-design electronic visual aids.

The design of the new technology bases on the structure of the teacher's activity according to N.V. Alumina, which contains five functional components: 1) gnostic 2) designing 3) construction 4) communication 5) management (Kuzmina, 1970). The structure of the teacher's activity suggested by N. Kuzmina relates to goal achievement in co-designing electronic media, however this structure is in need of more detailed features, which reflect peculiarities of working with certain ages of children and the content of the expected result of the co-design - an electronic medium.

This training does not only provide teachers with practical skills for this new field of ICT but also supplies a range of communicative knowledge, vital for efficient educational process.

5.2. Development of Teacher's Professional Culture in Further Education

A teacher today must meet the requirements of being capable to timely adjust in the everchanging environment of the modern world, of the ability to engage in successful and productive cooperation with all the participants of the process of mentoring and education, of mastering new psychological, pedagogical and information technologies, of being able to lay a theoretical and conceptual background to their work. (Shilova, 2004). Therefore, developing the technologies for continuing education of adults is one of the core global pedagogical problems.

As a result, innovation and continuity become an essential part of the modern system of education and integration of teachers into innovative projects suggests continuing further education in the whole span of professional activity.

In its turn a well-stimulated demand for professional growth and improving pedagogical culture leads to decrease in dissipation between motivation for updating knowledge and impending obsoleteness of educational content due to the today's processes of rapid development of science, technology, digitalization and communication media. This implies encouraging the teacher's motivation for self-improvement, increasing professional level and skills, implementing special media, methods and techniques of acquiring new knowledge and practical application of the newly mastered skills. Which consequently calls for upgrading to a new level of programmes of further professional education (retraining and further education), which are to satisfy a constantly increasing demand among professionals for uptodate information and efficient means of processing this information (Lomakina & Pisarenko, 2020; Maksimova, 2012; Trostinskaia et al., 2018).

6. Findings

Modules of further education courses for teaching the technique of mediation and the technology of co-designing electronic media have been created with the purpose of facilitating communication and information component of pedagogical culture.

The following empirical methods were implemented in the course of this research:

- monitoring;
- surveying (original questionnaires designed to determine the level of knowledge and tendencies: "General Knowledge Quiz on Conflicts and Methods to Resolve Them" and "Revealing the Tendency for Conflicting and Aggressive Behaviour");
- modelling experiment (implementation of the module of the further education programme "Mediative Approach to Special Features of Cooperation between the Participants of the Educational Process").

The results of the survey showed that more than 73% of the participants chose the option "at work" in response to the question "Where do you think most conflicts arise?", individual mental features and quality of upbringing of the members of the conflict are considered vital to resolving the conflicting situation by 36% and 47% of the surveyed correspondingly, more than 87% believe that a third party - an intermediary (an independent person) can provide effective assistance in resolving the conflicting situation.

The pilot experiment had 85% of the respondents state that they had improved their communication culture and that practical application of the mediation technique enables them not only to resolve various conflicts in the system of education more efficiently but also to organize prevention and correction activity to avert aggressive and asocial behaviour in children, adolescents and young adults.

A survey (pre and post training) was performed among the trainees in the process of learning the technology of co-designing electronic media. The results of this survey make it possible to conclude that the content and its practical application have been mastered successfully (figure 3).

According to the 2013-2020 survey among elementary school teachers in Moscow, Novosibirsk, Ekatirenburg, St. Petersburg and other regions, many elementary school teachers (almost 80%) utilize in their work electronic visual aids created by different publishers. In the practical educational process teachers widely apply electronic visual aids. It is important to mention, that a proportion of teachers are capable of designing their own electronic aids. Needless to say, teachers realize that the visual aspect of the content is often based on traditional static material, visuality being an integrate part of education and not its goal, with practical application in teaching aids implementing it.

Therefore, the results of the survey confirmed the need for designing a new "content world" for school students, which could provide easy perception and a special technology (actual methods) for better learning of educational content. The survey concludes that active learning process employed by students alongside with the activity of the teacher creates a corresponding system of teaching aids. In one respect this system supplies students with a source of knowledge and at the same time provides the best ways to contemplate and master this knowledge, developing necessary skills.
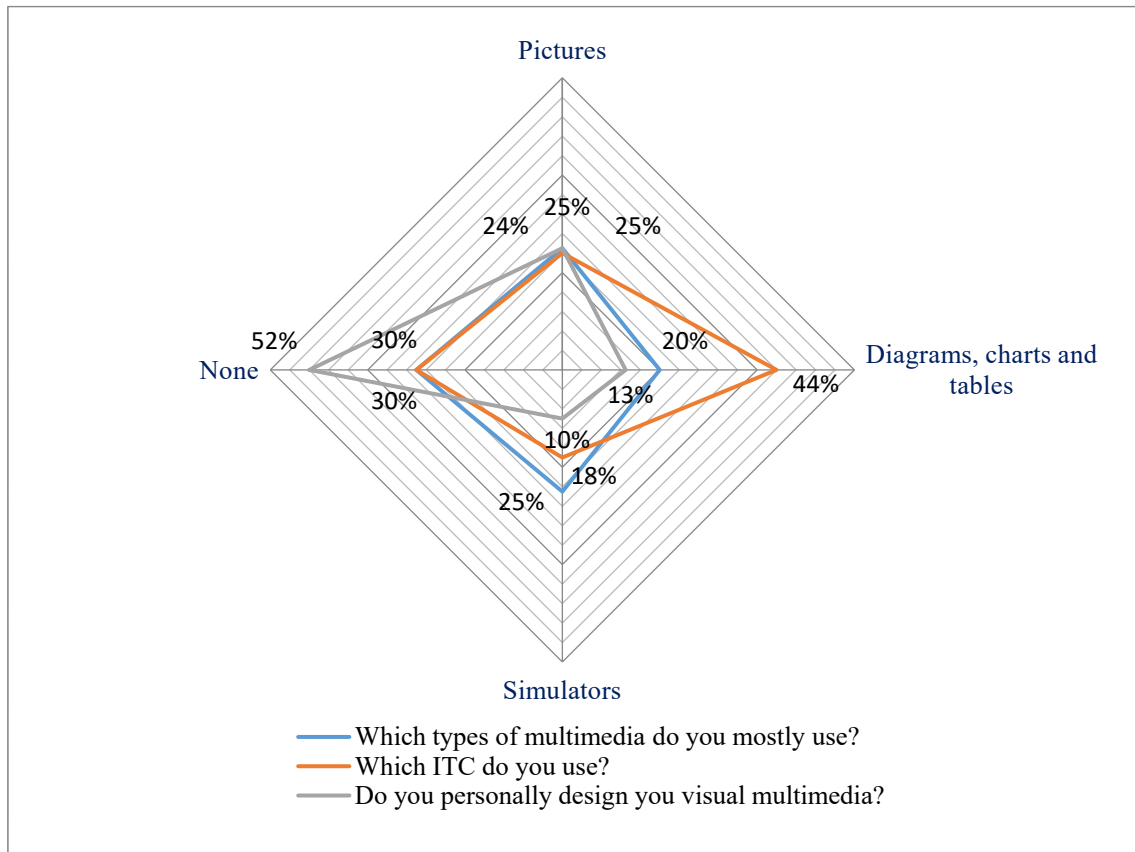
Figure 02. Implementation of the ICT by elementary school teachers

The analysis of the result of the survey shows an increase in teacher's professional growth in the process of learning modern information and communication technologies (figure 2).
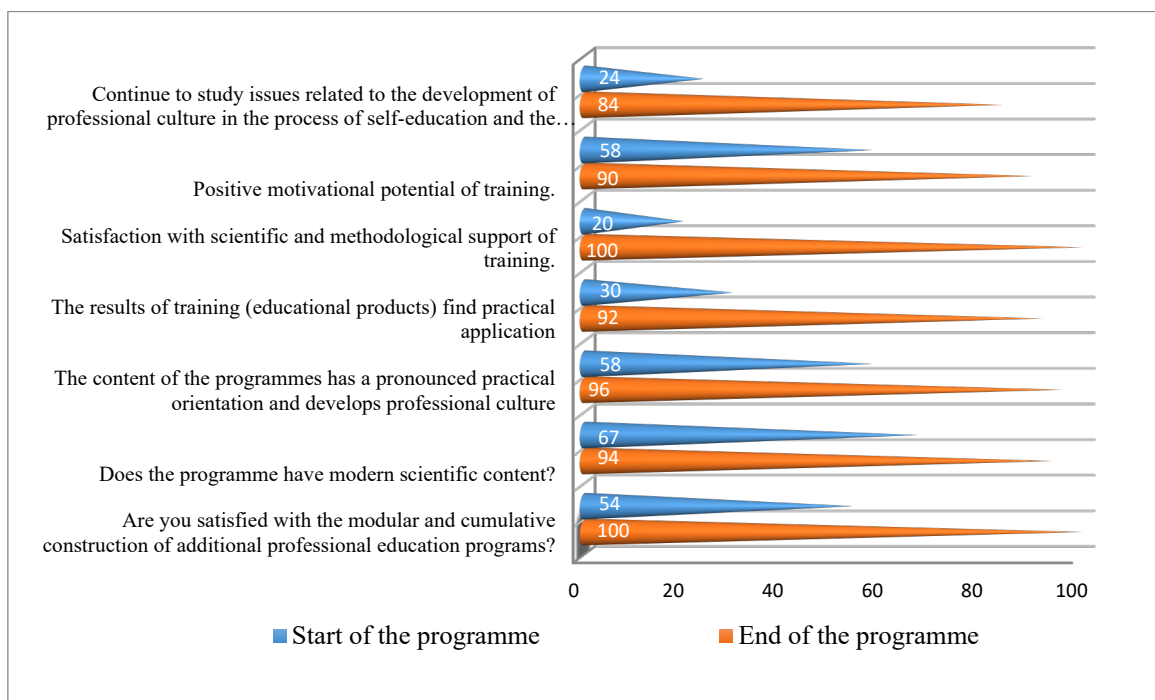
Figure 03. Teacher's professional growth

This said, applying modern approaches to shaping and developing teachers' professional culture while rendering support to continuing further education within the scope of extra-curricular professional programmes proves an efficient means of enhancing the skills of positive cooperation of individuals in modern society (figure 3).

7. Conclusion

It has been confirmed that the capability to partake in innovative activities in the educational environment increases equipotentially with implementation of the modules, described in this research. The aforementioned modules aim to develop and further facilitate communication and information culture of teachers in educational institutions in two ways: learning within the system of continuing scientific and methodological support (organizing seminars and webinars to exchange experience, panel discussions, master-classes etc.) and support for teachers' self-study activity (counselling and methodological support).

This research brings forward the conclusion that integrating information and communication aspects into the process of increasing professional culture broadens the scope of knowledge in information, social, psychological and mentoring aspects of teaching activity. Consequently, this facilitates successful improvement of the quality of education and mentoring process and stimulates motivation for practical application of the acquired skills in pedagogical activity. Engaging the technology of co-designing electronic media widens the horizons of the students, encourages their interest for understanding the world, improves their knowledge, enhances their learning skills. As a result school students knowingly process information received when working with new information technologies and possess the means to independently contribute flawless material.

Intensive development of designing and project skills of a teacher via application of modern ICT, such as mediation or technique of co-designing electronic media ensures successful process of education and mentoring.

A modern teacher's pedagogical culture is enriched with skills supporting the use of ICT in managing different types of learners' activity. These skills are connected to designing the educational process with the assistance of ICT (acknowledging place, importance of role of ICT in organizing effective processes, awareness of special features of psychological perception of ICT, ability to design the management process incorporating both traditional and innovative teaching means).

Furthermore, when a teacher masters ICT it broadens the boundaries of communication between the teacher and the student, thus guaranteeing effective educational process alongside with the environment favourable for cooperation of the participants.

The multifaceted approach to teaching is due to ensure conditions leading to successful application of acquired knowledge in the process of designing individual activity of teachers, administrators and other specialists and to make an educational organization as a unit function smoothly.

As way of conclusion it must be underlined that the skills in communication and digitalization facilitate the teacher's culture and make it possible to bind theoretical knowledge and practical experience in the field of information and communication technologies in the process of implementation of modern aspects of developing professional culture.

Acknowledgments

References

Bylieva, D., Lobatyuk, V., & Rubtsova, A. (2018). Homo Virtualis: existence in Internet space. *CC-TESC2018. SHS Web of Conferences 44,* 00021 438-446. https://doi.org/ 10.1051/shsconf/20184400021.

Ivanova, S. (2016). Interpretatsiya innovatsii v mirovom obrazovatelnom prostranstve v e'pohou media (e'sse) [Interpretation von Innovation im globalen Bildungsraum in den Medien (e'sse)]. *Tsennosti I smy'sly', 3* (43), 61-68. [in Rus.]

Kolyhmatov, V. (2019). Professional'noe razvitie pedagoga v usloviyah cifrovizacii obrazovaniya. [Professional development of a teacher in the context of digitalization of education]. *Scientific theory journal "Uchenye zapiski universiteta imeni P.F. Lesgafta, 8*(174), 91-95. https://doi.org/10.34835 [in Rus.]

Kopoteva, G., & Merzlikina, I. (2020). Primenenie sredstv mul'timedia dlya razvitiya chitatel'skoj gramotnosti uchashchihsya mladshih klassov. [The use of multimedia tools for the development of reading literacy of primary school students.]. *Nachal'noe obrazovanie, 8*(1), 37-40. [in Rus.]

Kopoteva, G., Logvinova, I., Molodikh, E., Pobedonostseva, M., & Oborotova, S. (2018). Development Of Pedagogues' Professionalism Through Co-Design And Co-Reflection. *The European Proceedings of Social & Behavioural Sciences, XLVI,* 367-377. https://doi.org/10.15405/epsbs.2018.09.02.43

Kuzmina, N. (1970). *Methods of research of pedagogical activity* [Methods of research of pedagogical activity]*.* Leningrad State University named after A.A. Zhdanova. [in Rus.]

Lomakina, T., & Pisarenko, D. (2020). Vneuchebnaya deyatel'nost' studentov Vysshej shkoly v kontekste realizacii koncepcii nepreryvnogo obrazovaniya [Extracurricular activities of students of the Higher School in the context of the implementation of the concept of continuing education]. *Otechestvennaya i zarubezhnaya pedagogika, 1*(65), 20-32. [in Rus.]

Maksimova, E. (2012). Professional'noe razvitie v sisteme nepreryvnogo professional'nogo obrazovaniya [Professional development in the system of continuing professional education]. *Vektor Nauki TSU., 1*(8), 206-208. [in Rus.]

Oborotova, S. (2015). Mediatsiy'a kak sovremennay'a tehnologiy'a oupravleniya konfliktami v obrazovatelnoi srede [Mediation's as a Modern Technology of Conflict Management in the Educational Environment]. *Tsennosti I smy'sly', 1*(35), 116-126. [in Rus.]

Oborotova, S. (2017). Model' formirovaniya mediativnoj kul'tury rukovoditelej i prepodavatelej obrazovatel'nyh organizacij v processe professional'noj perepodgotovki i povysheniya kvalifikacii. [A model for the formation of a media culture of managers and teachers of educational organizations in the process of professional retraining and advanced training]. *Sbornik kadrovyh resursov dlya nepreryvnogo professional'nogo obrazovaniya. Konsorcium "Mezhdunarodnaya associaciya professional'nogo dopolnitel'nogo obrazovaniya", 31,* 192-205. [in Rus.]

Osmolovskaya, I., Ivanova, E., Klarin, M., Serikov, V., & Aliev, Yu. (2019). Innovative Educational Practices: Classification, Design, Modeling. *The European Proceedings of Social & Behavioural Sciences, LXIX,* 598-605. https:// doi.org/ 10.15405/epsbs(2357-1330).2019.9.2

Pokhmelkina, G., & Semenov, I. (2008). Refletehnologii mediatsii v sovremennoi zaroubezhnoi prakticheskoi psihologii I konfliktologii [Refletotechnology of mediation in modern foreign practical psychology and conflictology]. *Psihologiy'a. Zhournal VSHE', 5*(1), 121-138. https://cyberleninka.ru/article/n/refletehnologii-mediatsii-v-sovremennoy-zarubezhnoy-prakticheskoy-psihologii-i-konfliktologii [in Rus.]

Sergeev, N., & Borytko, N. (2014). Koncepciya i tekhnologii podgotovki uchitelya-vospitatelya v sisteme nepreryvnogo pedagogicheskogo obrazovaniya [The concept and technology of training student teachers in the system of continuing teacher education]. *Izvestiya Volgogradskogo gosudarstvennogo pedagogicheskogo universiteta, 9*(94), 31-39. [in Rus.]

Serikov, V. (2011). Lichnostno-razvivayushchee obrazovanie: dva desyatiletiya iskanij. [Personal development education: two dozen searches]. *Proceedings of volgograd state pedagogical university. Federal state budgetary educational institution of higher education "Volgograd state social and pedagogical University", 8*(62), 14-20. [in Rus.]

Shilova, O. (2004). Informacionnaya kul'tura v professional'noj podgotovke sovremennogo pedagoga. [nformation culture in the professional training of a modern teacher] *Izvestiya Rossijskogo gosudarstvennogo pedagogicheskogo universiteta im. A.I. Gercena, 4*(9), 149-158. [in Rus.]

Trostinskaia, I, Popov, D., & Fokina, V. (2018). Communicative competence of engineers as a requirement to the future professions. *The European Proceedings of Social and Behavioural Sciences, LI,* 1191-1199. https://doi.org/10.15405/epsbs.2018.12.02.128