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**TEACHER'S PROFESSIONAL COMPETENCE:
NEW CHALLENGES, REALITIES AND PROSPECTS**

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Abstract

Changes in the global labour market apply new requirements to participants in labour relations. Currently, experimental work on the formation of competencies of the 21st century is actively carried out in different countries, including Australia, Canada, Russia, the USA, Finland, South Korea and others. Researchers note that a significant part of professional tasks demands from specialists to have soft skills presented in the "4C" model. These challenges define new requirements for teachers at different levels of education. The Russian system of teacher education reflects global trends in determining priority development vectors: today it is necessary to "equip" a teacher with such competencies, technologies, and skills that will provide learning outcomes that are adequate to the requirements of the 21st century. The purpose of this article is to select and justify modern learning outcomes and the corresponding pedagogical competencies as tools for solving the problems facing modern Russian educational practice based on the analysis of foreign and domestic studies, the analysis of the request for educational practice. In accordance with the purpose, the article presents an analysis of foreign and domestic studies on the problem of highlighting and structuring "new learning outcomes" in the training of teachers; an expert analysis of the results of designing educational models and a comparative analysis of organizational decisions in the system of Russian and foreign education.

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Keywords: Competencies of the 21st century, new learning outcomes, soft skills, educational process, additional professional education, design of educational models.



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1. Introduction

1.1. School education and its role in the modern world

Our future today is in a schoolroom, in a student classroom, sits at a desk, takes part in the development of projects, joins educational disputes and discussions, masters new and consolidates existing skills that ensure the formation of reading, functional, economic, legal, environmental and other types of literacy and the development of relevant competencies. The effectiveness of these processes influences the development of scientific and technological progress at all levels, including the country's defence and international credibility, the development of culture (preservation of the cultural code), the health of the nation and the strengthening of humanistic social relations within the country, making the lives of their citizens safe, comfortable, and fruitful.

Such an understanding (or close to it) of the role of school education and all that is happening in school today is the basis for the significance of this level of education and the reason for the increased attention to the processes taking place here. Moreover, attempts to deal with the essence of what is happening in general education are cross-national in nature and, despite the existing political, economic, cultural and other differences existing in the modern world, the problems of education are equally significant for everyone. The UNESCO's Global Education Monitoring Report (2016) published by UNESCO demonstrates this aspect. The authors of the report emphasize that not only the fate of every person on the planet, but also the future of mankind as a whole depends on the accessibility and quality of education and indicate the role of teachers in this process.

1.2. Modern understanding of learning outcomes in general and teacher education

The Russian system of teacher education reflects global trends in determining priority development vectors: along with the intensification of digitalization and the creation of a "digital information ecosystem", a value-semantic component of new learning outcomes and pedagogical activity itself is being formed.

The international report of the Higher School of Economics National Research University notes that the request for the indicated changes, first of all, came from the business, which consists in the need for high-tech work, including not only knowledge in the field of the subject field of labour activity, but also the so-called soft skills, which are new literacy included in the "four K" model: teamwork (collaboration), communication, critical thinking and creativity (What is a digital economy? Trends, competencies, measurement: report to the 20th international scientific conference on the development of the economy and society, 2019).

Currently, experimental work on the formation of competencies of the 21st century is actively carried out in different countries, including Australia, Canada, Russia, the USA, Finland, South Korea, etc. Moreover, this work is carried out in two interrelated areas: the formation of new competencies both among students and teachers. Today it is necessary to "equip" a teacher with such competencies, technologies, and skills that will provide learning outcomes that are adequate to the requirements of the 21st century. Thus, there is not only a transformation of existing pedagogical qualifications (teacher, educator, school counsellor, tutor, social educator), but naturally new ones, such as a game-master, organizer of project training, moderator of online platforms, developer of educational trajectories, etc. appear (Atlas of New

Professions. Agency for Strategic Initiatives, 2015). Existing professional standards (“Teacher (pedagogical activity in preschool, primary general, basic general, secondary general education) (educator, teacher)” and “Specialist in the field of education”) conceptually meet the objectives.

2. Problem Statement

Changes in the world labour market (transition to a high-tech type of production) apply new requirements to participants in labour relations. In modern conditions, the need has arisen for training a teacher of a new formation, capable of not only adapting to the changes that are taking place, but also working effectively at the junction of the needs of modern man and society in the sphere of personal and professional self-determination of the young generation.

This provision requires details of the following aspects:

- orientation of the teacher education system towards the training of teachers with soft skills (4C model) and the technologies for their formation among students;
- the degree of readiness of the comprehensive school and pedagogical university (educational practice) for the implementation of new professional tasks.

2.1. The system of teacher education requires changes in the part of the preparation and advanced training of teachers with a new qualification

An analysis of the requirements of federal state educational standards for the results of mastering undergraduate and graduate programs in the pedagogical major led us to the conclusion that the new Russian standards take into account the requirements of a dynamically developing labour market, including the educational field. The new learning outcomes include universal competencies that can rightfully be correlated with the concept of soft skills and the 4C model, namely communication (the ability to present group and individual results in oral (report, answers to questions) and written forms (textual and graphical presentation of the content in a presentation); critical thinking (the ability to carry out a critical analysis of information); cooperation (capable of formulating goals and objectives, planning, organizing and implementing project activity in accordance with the goal, to select the means to achieve the goal, evaluate the results of the project activity, manage the project at all stages of its life cycle) and personal results (understands and recognizes the professional significance of the implemented project activity; willingness to solve professional problems; determines the perspective further work and possible risks; carries out personal and professional reflection).

But if the subject-oriented training of teachers is carried out according to techniques that have been tested for many decades and is already a well-developed component, that is the “5th C” – content, then the scientific and methodological support for the training of a teacher who owns soft skills is clearly not developed. The solution to this problem is seen in the design of vocational training based on the principles of vocational orientation, interdisciplinary integration and multi-contextual subject matter (Shkerina & Shkerina, 2017); the use of technology for problem-based learning, the development of critical thinking, and coaching (Savolaynen, 2014); the inclusion of students in such activities as goal-setting, analysis, synthesis, evaluation.

2.2. The degree of readiness of a comprehensive school (educational practice) to implement new professional tasks

An analysis of the scientific psychological and pedagogical literature, dissertation research and educational practice allowed revealing the difficulties experienced by teachers in carrying out professional tasks. Most researchers note the fact that a significant part of professional tasks requires teachers to have soft skills, while they focus on substantive content.

It should be noted that the national project “Education”, aimed at achieving two key objectives, namely, ensuring global competitiveness of Russian education and including the Russian Federation in the 10 leading countries of the world on the quality of general education and raising a harmoniously developed and socially responsible person based on the spiritual and moral values of peoples of the Russian Federation, historical and national-cultural traditions, involves the implementation of 4 main directions of development of the education system: updating its content, the creation of the necessary modern infrastructure, the training of appropriate professional personnel, their retraining and advanced training, as well as the creation of the most effective mechanisms for managing this area. Each of the declared directions is directly related to the professional competencies of teachers, their possession of soft skills.

But at the same time, the achievement of national and regional priorities for the development of the Russian education system is complicated by an unorganized system of interagency interaction and social partnership both horizontally in the network of educational organizations of the same level, and vertically, ensuring the continuity of educational levels: kindergarten – comprehensive school – secondary vocational education – higher education – organizations and enterprises, as well as a system of social partnership

3. Research Questions

What is meant by “new learning outcomes”?

What is the structure of “new educational outcomes”?

What are the problems in the training of teachers with a new qualification?

What relevant and promising organizational decisions are made in the system of Russian and foreign education in order to overcome the contradiction between the needs of educational practice in specialists with modern competencies and a system of training and retraining of teachers?

4. Purpose of the Study

The purpose of this article is to highlight and justify modern learning outcomes and the corresponding pedagogical competencies as tools for solving the problems facing modern Russian educational practice on the basis of analysis of foreign and domestic studies, analysis of the request for educational practice.

5. Research Methods

5.1. Analysis of foreign and domestic studies covering the problem of highlighting and structuring “new learning outcomes” in teacher training

In order to highlight and structure relevant learning outcomes in the preparation of a 21st-century teacher, an analysis of foreign (John & Hattie, 2009), Instefjord and Munthe (2016), World Economic Forum (2016a), Gudmundsdottir and Hatlevik (2018), MacPhail et al. (2019), Tack and Vanderlindeg (2019), Malm (2020), Hubers et al. (2020), Assunção (2020), Colognesi et al. (2020), Young (2018) and others, and domestic studies (international reports of the Higher School of Economics National Research University (2018, 2019); Tsalikovaan and Pakhotina (2019), etc. was carried out.

Professor Young (2018) cites evidence that the Young Australians Foundation has analysed 4.2 million job postings in Australia and found an increase in demand for so-called corporate skills that are presentation and problem-solving skills, creativity and critical thinking. As the scientist points out, these are actually the same “4C”. In addition, he notes that there has been an extremely high demand for digital literacy and language skills. Turning to the peculiarities of university education, Sh. Young rightly, from our point of view, notes two main points: the first is that we live in a world in which many actions are performed in digital format and it is impossible to teach students these relevant skills using traditional pedagogical techniques. Although preparing students for life in a world where there is no Google or smartphones does not make much sense, many universities retain the traditional approach to learning and teaching. The training system is focused on the “the 5th C” that is content. In the era of the widespread dissemination of information, “remembering” and “understanding” become much less relevant than the skills of a higher order described by B. Bloom such as the skills of analysis, synthesis (as cited in Young, 2018). According to many researchers, the effectiveness of specialists in professional activities directly depends on the level of development of soft skills. Having carried out a systematic analysis of the studies, it can be argued that there is no single list of soft skills as one of the significant learning outcomes of teacher training. We note that the most complete classification of this group of skills is presented in the World Economic Forum (2016b). The claimed study identified 35 skills, divided into three groups: abilities, basic skills and cross-functional skills.

An analysis of the requirements of Russian standards for the results of mastering undergraduate and graduate programs allowed us to conclude that the new standards take into account the requirements of a dynamically developing labour market, including the educational field. The new learning outcomes in the system of Russian higher education include universal competencies, which can rightfully be correlated with the concept of soft skills and do not contradict the international “4C” model.

Based on these provisions, we made an attempt to classify this group of skills among teachers in relation to the highlighted soft skills in the designated international study.

Table 01. Correlation of soft skills relevant for the world labour market and soft skills of a teacher

№	Types of soft skills	Common soft skills	Teacher’s soft skills
1	Abilities	1. Cognitive abilities: – cognitive flexibility; – creativity; – logical reasoning;	Creativity (able to produce ideas and transform them into a creative product; capable of organizing,

		<ul style="list-style-type: none"> – sensitivity to problems; – mathematical argumentation; Visualization 	<p>implementing and managing the creative process)</p> <p>Math literacy</p> <p>Digital literacy</p> <p>Personal results (understands and recognizes the professional significance of the implemented activities; is ready to solve professional problems; determines the prospects for further work and possible risks; carries out personal and professional reflection)</p>
		<p>2. Physical abilities:</p> <ul style="list-style-type: none"> - physical health; - fine motor skills 	<p>Self-organization and self-development, including health protection (the ability to maintain the proper level of physical fitness to ensure full social and professional activities)</p>
2	Basic skills	<p>1. Content skills:</p> <ul style="list-style-type: none"> – active learning; – oral communication; – active reading; – written communications; – information literacy 	<p>Communication (the ability to present group and individual results verbally (report, answers to questions) and written forms (textual and graphical presentation of the content)</p> <p>Systemic thinking (the ability to search, analyse and synthesize information)</p> <p>Reading literacy</p> <p>Digital literacy</p> <p>Personal results (understands and recognizes the professional significance of the implemented activities; is ready to solve professional problems; determines the prospects for further work and possible risks; carries out personal and professional reflection)</p>
		<p>2. Process skills:</p> <ul style="list-style-type: none"> – active listening; – critical thinking; – introspection and analysis 	<p>Critical thinking (ability to carry out critical analysis of information)</p> <p>Digital literacy</p> <p>Personal results (understands and recognizes the professional significance of the implemented activities; is ready to solve professional problems; determines the prospects for further work and possible risks; carries out personal and professional reflection)</p>

3	Cross-functional skills	<p>1. Social skills – coordination; – emotional intelligence; – negotiation; – the ability to convince; – customer focus; – training others</p> <p>2. Skills for solving complex problems</p> <p>3. System skills: – decision making; – system analysis</p> <p>4. Resource management skills: – financial; – material; – human; – time management</p> <p>5. Technical skills: – technological literacy; – operational literacy; – programming; – quality control; – technological customer focus; – diagnosis of technical problems</p>	<p>Cooperation (able to formulate goals and objectives, carry out planning, organize and implement professional activities in accordance with the goal, select the means to achieve the goal, evaluate the results of professional activity, manage it)</p> <p>Computational and algorithmic literacy</p> <p>Digital literacy</p> <p>Personal results (understands and recognizes the professional significance of the implemented activities; is ready to solve professional problems; determines the prospects for further work and possible risks; carries out personal and professional reflection)</p>

The analysis of the information presented in the table 01 allows us to state that the soft skills that are in demand on the world labour market are correlated (take on a “cross-cutting” character) with the soft skills of 21st century educators. At the same time, the analysis of international and domestic studies made it possible to fix the terminological and structural ambiguity in the description of new learning outcomes: universal competence, universal skill, corporate skills, soft skill and literacy, which makes it difficult to build continuity in the formation and development of "new results" by educational level. Each component of the teacher’s soft skills includes digital literacy, which is a modern tool for the design, creation and use of digital educational content and personal results that allow drawing up the value-semantic field of the teacher’s professional activity.

Unfortunately, teachers themselves do not always understand the new challenges facing the education system and the level of their readiness to solve them. Thus, the analysis of the results of a mass survey of teachers in a comprehensive school showed that:

- 69.6% of respondents are able to evaluate their actions and analyse how they affect the learning outcomes of students;
- 66.11% of respondents are result-oriented, i.e., they are able to clearly set learning goals and success criteria; they are ready to change methods if students have not reached the goal;
- 76.53% of respondents collaborate with colleagues, unite to improve students' results;
- 71.05% of respondents develop students, prompting additional efforts;

- 68.12% of respondents take an individual approach, are attentive to the characteristics of students, select tasks based on their level;
- 69.09% of respondents build trusting relationships with students (Materials of the All-Russian Intensive 2020 “I am a Teacher”).

However, according to Kiuru and Popova (2019), among students of two Chelyabinsk universities at the time of their admission:

- only 3.7% of respondents had skills of critical thinking developed at a high level, critical thinking skills of 16.2% of them were at a low and very low level;
- 14.8 % of respondents had communication skills developed at a high level, communication skills of 4.8% of them were at a low and very low level;
- 4% of respondents had teamwork skills developed at a high level, teamwork skills of 14.8 % of them were at a low and very low level;
- 7% of respondents had creativity skills developed at a high level, creativity skills of 13 % of them were at a low and very low level (2019).

5.2. Expert analysis of the results of educational models’ design: managerial, pedagogical and methodological practices

It is worth noting there are restrictions on the selection of expert practices. The examination included 19 Russian educational models of various orientations, the results of which are confirmed by the available data, based on many years of experience in cooperation with educational organizations of general education in Krasnoyarsk and Krasnoyarsk Territory.

The results of the examination of educational models developed by teachers allow us to argue for a formalized approach to the type of professional activity. Most of the practices are framed, there is no evidence of interagency interaction and social partnership; the description is unstructured with terminological and semantic distortions, inaccuracies; a large proportion of practices is not the result of joint design of all interested parties, but is set solely by the administration.

We also note the insufficient involvement of preschool education teachers in this type of innovative activity (2 practices out of 19).

None of the proposed models presents a mechanism for stimulating teachers to achieve their goals; only quantitative indicators of assessing the professional competency of specialists are highlighted: for example, the number of specialists who have passed advanced training and professional retraining in areas of education; there are no methodological materials on the implementation and maintenance of the practice, which makes it difficult to assess its effectiveness, the degree of readiness for implementation and replication.

The results confirm the conclusions about the insufficient level of development of meta-subject training of teachers, including a certain list of soft skills presented in the table 01.

According to many domestic academic scientists (Kan-Kalik, Mudrik, Slastenin, & Shchurkovai and others), humanization in the system of vocational education should occupy one of the main lines. The

formation of a teacher as a subject of personal and professional development (understanding the meanings of one's own professional activity, the educational process, and the features of its design, organization and management) has a direct impact on the development and formation of "new learning outcomes" of students.

The need of educational practice in a specialist who can operate in a multitasking, multi-contextual and innovative development mode necessitates updating the system of professional training, advanced training and retraining of specialists based on the ideas of continuing education (Memorandum of Continuing Education): the value of human capital; the relationship of formal, non-formal and informal education; the formation and development of new learning outcomes of students at all levels of education; development and implementation of new models of professional interaction: various types of mentoring, network interaction.

5.3. A comparative analysis of organizational decisions in overcoming the contradiction between the needs of educational practice in specialists with a new qualification and the features of professional training of future specialists in the system of Russian and foreign education

Mentoring as a form of professional interaction is seen as an effective tool in preparing a teacher for a wide range of professional tasks (Colognesi et al., 2020; Hattie, 2009). These researchers prove the idea that the implementation of informal support (conversations on professionally and personally relevant topics, spontaneous help from colleagues, and spontaneous inclusion of innovative aspects in professional activities) in the framework of mentoring between a novice teacher and an intern is the most effective in achieving personal and professional goals. In Russia, mentoring is not a widespread practice. An analysis of the report on the results of the international study of the teacher corps on teaching and learning (Report on the results of the international study of the teacher corps on teaching and learning talis-2018, 2019) confirms this position, because only 28% of schools, according to the headmasters, support young professionals through formal and informal types of assistance, and 77% of teachers with work experience up to 5 years noted the absence of any programs for introducing into the profession. At the same time, the chiefs of educational organizations in Russia to a greater extent recognize the high importance of mentoring (88%) in the development of professional competence of teachers, unlike colleagues in other countries (71%).

Professional training of future teachers also requires the development and implementation of a mentoring model aimed at "nurturing" specialists who are able to solve not only typical professional tasks. One of such examples among Russian pedagogical universities, in particular in Krasnoyarsk State Pedagogical University named after V.P. Astafiev (Bocharova, 2018), is the implementation of a pedagogical internship model that allows students – future teachers to master more deeply not only the subject field of the profession, but also be included in the solution of multi-context professional tasks in educational organizations. This model and the corresponding mentoring practice are one of the mechanisms for implementing network interaction, which allows us to bridge the "gap" between the needs of educational practice in specialists with a new qualification and the features of professional training of future specialists.

Separately, we note the role of the system of additional professional education in the development of professional soft skills of teachers. At Krasnoyarsk State Pedagogical University named after V.P. Astafiev programs of professional retraining and advanced training are implemented at the Institute of Continuing Education and Further Training. Since 2018, the University has been participating in the All-Russian competitive project in the field of additional educational programs “Educational Marathon”. Additional professional retraining programs “Teacher of basic and secondary general education” (2018), “Management in education” (2019) and “Teacher of additional professional education” (2019) became winners of the 3rd, 4th and 5th stages of the competition. The programs were evaluated by experts as fully meeting the industry and regional requirements of the labour market and contributing to the effective development of human capital in the context of socio-economic modernization of Russia.

In 2019 KSPU named after V.P. Astafiev took part in and became one of the winners of the federal project "New Opportunities for Everyone" of the national project "Education". Customers and students highly value the quality of continuing education programs.

We associate the development prospects of the continuing education system with further personification, digitalization and the flexibility of building the educational process, involving representatives of pedagogical expert communities in the design and implementation of continuing education and professional retraining programs; strengthening the value-semantic component of professional development and self-development of teachers (designing individual trajectories of professional development: fixing the development goal / expected result based on the analysis of professional, personal resources and their deficit, analysis of information received from reference and competent specialists in the relevant field; fixing developmental actions and related development tools with a designation of the implementation period).

6. Findings

In order to bridge the “gaps” between the professional training of teachers and the request of educational practice for a specialist of a certain quality, priority vectors for the development of continuing professional education are highlighted:

1. Development and implementation of relevant basic and additional professional educational programs, programs of continuing education and professional retraining of teachers in relevant areas of the region, “Individualization of students' education”, “Tutoring support for students with disabilities and / or disabilities”, “Education for financial literacy of students”, “Economic education: kindergarten – school”, “Digital literacy of the teacher”, “Modern pedagogical technologies”, “Fundamentals of project activities”, etc.

2. Inclusion of students in the research work of the project type (applied undergraduate and graduate programs); development of criteria and tools for assessing new learning outcomes.

3. Inclusion of students in the development of the profession through continuous training and production practices, pedagogical internship.

4. Development of a graduated system of incentives for teachers and students, taking into account the initial state of practice; the creation of individualized “packages of support tools”, in particular, it is advisable to provide an opportunity for educators, who are authors of innovative models of practices, to

pass an internship in other regions or to provide internships in the participant's region with the involvement of colleagues from other regions and, possibly, from abroad.

6. The introduction of employers into the project teams for the development and implementation of educational programs, as well as for assessing the effectiveness and efficiency of their implementation in training specialists for educational practice, including through networking.

7. Development of a model of mentoring and its implementation in the aspect of accompanying young specialists in educational organizations.

These proposals will allow building a network of continuing professional education.

7. Conclusion

Russian teacher education is part of a global training system for the education system. The analysis of the existing educational practice in our country and abroad allows us focusing on the best samples, diversify our experience, really evaluate the results achieved and determine ways to overcome existing problems. High-quality education is, first of all, a contribution to a person, creation of decent living conditions and professional activities for them in a steadily developing society.

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