Information technologies and resources in the daily professional activities

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Abstract. Based on applied sociological research results (data collection technique - in-depth interview), the main directions of using information technologies and resources by young teachers in a big Russian city are examined.

The article states that the digital transformation of the educational environment influences everyday work of young teachers.

The positive and negative instances of the digital transformation of the educational environment are highlighted. The studies have defined that the effective use of information technologies and resources is capable of minimizing some difficulties and risks faced by modern teachers in their daily professional activities. The studies have indicated new courses for the introduction of information technologies into the daily practice of the professional activity of young teachers. After conducting empirical verification of the influence of the digital transformation of the Russian society and the education system on the formation of the professional identity of young teachers in a big Russian city the authors have concluded that information technologies and resources are a constitutive factor in building professional identity of young teachers in a big Russian city.

1 Introduction

Recent decades have seen digital transformation of all spheres of the Russian society.

In recent years, significant digital changes have occurred in different areas such as media and entertainment, manufacturing and trade, financial services and technology products, healthcare and housing and communal services. Education did not stay on the sidelines, either.

Effective transition to the digital economy can only be achieved through the development of communication networks, Russian data centre systems, introduction of digital platforms to work with the data so as to meet the needs of different categories of citizens. It requires a fundamental revision of the education system which should provide a new generation economy and efficient staff. The school is considered as one of the main agents since the school years constitute an important stage in the socialization of an individual, and teachers are responsible for the knowledge function in society.

The national project of education and Federal Project "Digital Learning Environment", "Teacher of the Future" are focused on a set of measures including equipping schools with

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high-speed Internet, creating a digital educational platform for students, teachers and parents, increasing digital literacy and development of digital competencies of all participants in the educational process.

A particular emphasis concerning the question of teachers of the future is placed on young teachers. Firstly, they are a product of the new digital era and their primary socialization already took place in the years when digital technologies were actively included in the everyday practices of individuals, and they are also the ones that belong to the category of digital natives [1]. And secondly, in 5-10 years they will make up the main staff of Russian schools, designed to become, on a par with other subjects of the educational space, forges for training effective personnel for the digital economy.

Since there is a stable idea in society that young teachers are the future of the Russian education system, research teams conduct researches aimed at studying this social and professional group from time to time.

Thus, scientific literature has already summed up the results of the study of individual issues related to young teachers: the change in the role of a modern teacher [2] was analyzed, as well as the results of an empirical study of individual components of the professional readiness of young teachers: motivational, intellectual, communicative, emotional and volitional [3,4].

It should be noted that a critical analysis of foreign literature on the impact of the digital transformation of society on the professional identity of teachers made it possible to establish that more attention is paid to this issue in the West than in Russia. This is largely due to the fact that Western Societies faced digital transformation processes in their daily lives earlier. This allowed foreign scientists to accumulate a specific theoretical and methodological experience in studying the professional identity of various social groups of teachers in the context of the digital transformation of society. Studying this experience makes it possible to raise the matter of the possibility of its implementation in the Russian environment, taking into account its socio-cultural specific features.

Wondering what it means to be a teacher in the digital age, foreign researchers draw attention to the fact that the digital transformation of society and the spread of modern digital technologies in the school education space encourage teachers to think and act in a new way. [5]. Thus, the researchers conclude that the digitalization of education facilitates evolving of a flexible and interactive "cyber" way of thinking highly-charged with network metaphors. [6]. Foreign researchers also focus on such issues as who should teach at school, what a good teacher looks like, and how it is best to evaluate and reward school teachers. Seeking for answers to these questions foreign researchers, in particular American, attach special importance to the specifics of the US education system, which determines the social contexts and professional opportunities, as part of which goes the formation of the professional identity of teachers. The researchers use different theories of identity construction to understand how the teachers realize their professional self in terms of the reformatory climate [7, 8, 9].

2 Materials and Methods

The purpose of this article is to consider everyday working practices of young teachers in a big Russian city associated with the use of information technologies and resources, as well as to evaluate the nature of the impact of new information technologies and sources on the formation of the professional identity of young teachers.

The empirical base of the research was an applied sociological study conducted by the authors in the summer of 2020. The method of collecting empirical data is an in-depth interview with young teachers of municipal secondary schools in Rostov-on-Don.

The sample was constructed using elements of the “eight-window model of the survey interview” [10] and included 16 young teachers from Rostov-on-Don. The main parameters that allowed the authors of the article to form the required sample were: basic pedagogical education; professional success, which includes both objectively recorded professional achievements of the teachers themselves, and the students trained by them; participation in government programs supporting young teachers.

In addition to the indicated basic parameters used in constructing the sample, at the stage of selecting informants for in-depth interviews, such parameters as gender, area of the discipline (Humanities/Sciences), as well as the representation of primary school teachers, type of educational organization (school/gymnasium/lyceum) were also taken into account. This was reflected in the equal representation in the sample of men and women, teachers of humanitarian disciplines and natural sciences, as well as teachers from “ordinary” comprehensive institutions and specialized ones with the status of a gymnasium or lyceum.

Developing the problematics of the professional identity of young teachers, the authors distinguish three stages in the formation of the professional identity of young teachers. At the first stage, young teachers are self-categorized as representatives of the professional community and others (not teachers) are categorized as representatives of other professional communities. At the second stage, young teachers accept certain professional values that are characteristic of a particular professional community. At the third stage, professional identity is institutionalized and preserved as a model of professional behaviour. An important function of the professional identity of young teachers is that it contributes to their integration into the professional community and also determines the duration and effectiveness of young teachers' implementation of their professional activities.

The methodological basis for a sociological study of the professional identity of young teachers in the context of the digital transformation of Russian society was the theory of the information society by M. Castells [11], the constructivist approach of P. Berger and T. Luckmann [12] and the “soft concepts” of identity that developed within its framework (R. Brubaker, F. Cooper) [13] and generational theory by Howe, Strauss [14].

The instrumental concept of a “young teacher” used in this study, sounds like this - a young teacher is a specialist who has been working in the general education system for less than five years, and whose age does not exceed 30 years.

3 Results

Considering in this work information technologies as processes, methods of searching, collecting, storing, processing, providing, disseminating information, we would like to note that young teachers are very well aware that a modern school cannot do without special electronic devices since gadgets have rightfully become a fixture in all spheres of life of individuals: “electronic means and gadgets surround us everywhere: we have smart refrigerators, smart air conditioners, split systems, children are accustomed to the fact that these objects surround them in everyday life”(male, Natural Sciences, 27 years old, teaching experience 4 years).

In modern schools, equipping with information technologies includes electronic registers, diaries, timetables, using electronic teaching schoolbooks and computer programs for monitoring students' knowledge, interactive boards. As a part of the study, young teachers note that information technologies are actively used by them in their daily work practices. So, the informants said that “of all the teachers, my work with the chalkboard was minimized, I always worked more with the interactive board”(male, Humanities, 26 years old, teaching experience 4 years).

We should note that the use of information technology at school contributes to the development of cognitive and mental activity of students, makes it possible to apply new

methods of educational work, makes the learning process more fun and effective. During the interview, the young teachers noted, "Personally, I like the interactive whiteboard and presentations more, because it is a visual series and it is remembered better, and I also teach a lesson, tell, explain to children what is what and why" (male, Humanities, 26 years old, teaching experience 4 years). "There are, for example, lessons when I don't work with the blackboard at all. We just work with an interactive whiteboard. In fact, it is very interesting, the children really like these lessons. Not just "apples and pears were transported by the carriage", but something more interesting, more modern. And as for the physical warm-up, I remember our physical warm-up minutes when I was at primary school, when the teacher got up and, together with you, twisted her legs and his arms. Now you just type in a "physical warm-up for children" (in the search line of the Internet, the author's note). There are dancing and gymnastic ones, and there are exercises for eyes and fingers, and whatever" (female, primary school teacher, 25 years old, teaching experience 4 years).

It is important to note that recently emerging platforms with online courses, video lessons, and online hobby clubs for schoolchildren are aimed not only at the development of students' digital competencies but also serve as excellent platforms for the self-development of teachers themselves.

The emergence of specialized Internet sites (Moscow Electronic School, Network City. Education, online schools, etc.) throughout the country which represent the application of traditional education in new digital conditions, allows teaching and learning in a new way, not only to a new generation of school children but also to teachers. So, checking with one of these resources, we found feedback about the teachers' project, according to which information platforms allow teachers to develop professionally and improve: "This is a common city platform, and in my opinion, this is a tremendous opportunity for teachers to exchange experience. For example, I do not have the opportunity to attend lessons of my colleagues, especially from other schools, but here I can watch their lessons, find some ideas for myself, use them - it is very convenient" (a Biology teacher); "A big advantage is that I can use the experience of my colleagues. I use an electronic library, I can use a tried-and-tested electronic synopsis and supplement it with my material. And as a result I have an interesting, bright, rich lesson ready" (school teacher) [15].

In the modern world, knowledge becomes outdated very quickly and, in this regard, the main task of the modern school in the era of digital technologies is not transferring ready-made knowledge but teaching a child to obtain the necessary information by themselves (teaching to learn). The modern educational process cannot do without using electronic libraries, databases and the formation of skills to work with them. Modern children actively make presentations, build charts, create technological projects.

At the same time, young teachers do not stop progressing and use every opportunity for this. For example, in one of the interviews, the informant said that social networks, as well as other resources on the network, are used by her for professional purposes: "There are a couple of teachers on Instagram that I read, and I sometimes participate in some discussions. There are teachers whom I read and I am interested in their opinion, also I can express my own" (female, elementary school teacher, 26 years old, teaching experience 4 years).

Young teachers of sciences spoke during the study about their projects to create specialized educational programs and platforms, sites. In general, we should note that the Internet is viewed by teachers of the new generation as an independent space for their professional activities outside the school. New professional opportunities and hopes for a different level of material award for their professional work are associated with the Internet, too: "In 10 years' time this is still education, it is still teaching, but this is 3, 4 times more earnings <...> it will depend on the professionalism and on how quickly you log on and go online" (male, Humanities, 29 years, teaching experience 5 years).

4 Discussion

We should note that, despite the reported data, the infrastructure base of Russian municipal schools remains insufficient, even in big Russian cities, which is necessary for the digital transformation of the school education system.

That does not allow young teachers to use new technologies smoothly in their daily work practices.

Informants noted during conversations that "Sometimes you just sit and duplicate the register in a paper version because either the Internet is slow or the computer hangs up a little. Sometimes you have to do double work: first, put down the marks on the paper, and after the lessons are over you go online and transfer everything. Let's just put it this way, it doesn't often happen that I put marks in the online register, and it is all saved, unfortunately, this does not happen, we have to duplicate" (female, elementary school teacher, 26 years old, teaching experience 4 years).

Despite the popular message in public discourse about the benefits of digitalization for the educational process, young teachers do not hide the fact that there are other opinions on this matter: "On the whole, some say that all this digitalization is a big black hole that takes a lot of energy and time and the education itself gets lost" (male, Humanities, 28 years old, teaching experience 5 years). And they also note that it is children who become the main beneficiaries of this process: "This is more for children, not for teachers." (female, Sciences, 24 years old, teaching experience 2 years).

Also, since many issues of material and technical equipment of the school are resolved due to the financial participation of the students' parents, new risks may appear in such a complex system of interaction "parent-teacher" which is another destructive factor in the formation of the professional identity of young teachers in modern Russian society.

However, we would like to note that there are also positive trends associated with the active introduction of information technology in modern schools. Thus, the obtained results of the study in comparison with the knowledge already available in scientific discourse about the professional identity and professional activity of modern teachers, including young teachers, allow us to claim that information technologies and resources have a constitutive potential in the process of forming the professional identity of young teachers.

They allow to neutralize the risks associated with the high workload of modern teachers, both with direct professional duties and with accompanying assignments. They will help to reduce the level of labour effort while preparing and conducting a lesson: "It certainly makes it easier. There is no such thing that I come home in the evening and begin to dig up to find some resources. I have a 20-minute break, I scan briefly, whether I like it or not. And then you can decide together with the children in the same stream. It is interesting, the children like these lessons" (female, primary school teacher, 25 years old, teaching experience 4 years); "In general, anyone who knows how to use the Internet understands that you can find a large number of presentations on the necessary topics and just rewrite them for yourself" (male, Humanities, 26 years old, teaching experience 4 years). And minimize the risks that all teachers face, regardless of teaching experience, associated with an increased level of accountability and excessive bureaucracy [16].

There are IT-specific programs in the information environment which are actively used by young teachers to facilitate the implementation of these kinds of their daily professional routine and together with electronic registers they can minimize the destructive effect exerted on their professional identity construction. For example, young teachers have repeatedly said in interviews that they intensively use digital technologies in the formation of various types of reporting by downloading the necessary information from the general system data or previously prepared reporting documents: "Of course it makes it easier! We have heard plenty of teachers say how they wrote all their reports by hand but we can make a report once

and then just change the numbers. Naturally, this is huge work and now our life has become much easier in this regard” (female, Science, 24 years old, teaching experience 1 year).

5 Conclusions

Thus, we can conclude that the digitalization of school education is consonant with the representatives of the young generation of Russian teachers, due to their generational characteristics.

The plots presented in this work and related to the use of information technologies and sources in the daily work practice of young teachers of modern urban schools illustrate a wide range of applications of new technologies. Of course, the utilization efficiency of using these technologies largely depends on the infrastructural equipment of the educational institutions and the method of application that a particular teacher uses. The fact that young teachers in Rostov-on-Don actively use information technologies in their daily professional activities indicates their readiness for transition to new education adapted to the demands of the digital economy for a new generation of personnel. Thus, the revealed potential of using information technologies by young teachers allows us to make conclusions not only about the constitutive influence of new technologies on the development of the education system as a whole but also the formation of the professional identity of young teachers. Because the introduction of information technologies has a positive effect on the traditional risks existing in the professional field of teachers associated with bureaucratization and increased accountability, which were previously considered by researchers as destructive factors in the formation of the professional identity of young teachers.

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