

# **Digitalization of Education Management Processes on Municipal Level: Characteristic of Processes**

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## **ABSTRACT**

In modern market conditions, implementation of digitalization processes affects the increasing number of everyday life areas because it is an efficient tool of any technological process allowing the optimization of numerous tools. The field of education on the municipal level is not an exclusion, and it is also subject to the digitalization process.

In conditions of the information society and transfer to the "e-state" system, processes of the municipal education management become especially actual. This paper deals with the issues of digitalization through the example of the Berezovskyi in Sverdlovsk Region. With the purpose of revealing basic causes of the low level of information provision of the municipal administration processes based on Department of Education of Berezovskyi in Sverdlovsk Region, the study with the participation of employees of Department of Education and parents of secondary school students studying in education institutions of Berezovskyi, was carried out. The main directions of the process specified, tasks and main implementation tools were considered. With the purpose of revealing the issues of the insufficient level of information provision of the municipal administration processes based on Department of Education of Berezovskyi in Sverdlovsk Region, the monitoring was carried out, the results of which are also given herein; in addition, these results are the justification of measures offered. In the course of the study, analytical methods, survey and observation were used, and methods of process digitalization optimization were developed...

**Keywords:** *digital technologies, department of education, municipal authorities, social management, development program*

## **1. INTRODUCTION**

As a part of the administrative reform, carried out in our country, digitalization of the social management field is aimed at the improving the administration efficiency in the specific living environment. The development of this direction is provided for by the State Program of the Russian Federation "Development of Education for 2013-2020" [1] and the respective municipal programs.

Analysis of issues and prospects of development of education management on the municipal level proves that the improvement of the education system optimization processes is impossible without using the information technologies. To the known extent, it required the considerable changes in management methods and principles, that is being implemented not efficiently enough on the municipal level.

With the purpose to increase the efficiency of managerial activity in education on the municipal level, it is required to study issues faced by municipalities at the transfer to digital technologies.

With the purpose of revealing basic causes of the low level of information provision of the municipal administration processes based on Department of Education of Berezovskyi in Sverdlovsk Region, the study with the participation of employees of Department of Education and parents of secondary school students studying in education institutions of Berezovskyi, was carried out. The development of this municipal education educational sector information medium has three principal directions now:

1. Information technologies implementation directly into the learning process.
2. Education management system informatization
3. Increasing of physical infrastructure of education institutions

## **2. MATERIALS AND METHODS**

The implementation of information technologies directly into the educational process is carried out in the Department of Education of Berezovskyi through the municipal program "Development of the Education System of Berezovskyi City District till 2020" [2].

The program should be implemented through the performance of the line of tasks established in the municipal strategy project, such as:

- increasing the physical infrastructure of general school and pre-school education institutions;
- increasing the efficiency of using the information educational system resource provision
- creating of the adequate and efficient system for educational service quality assessment in municipalities that will allow influencing the educational processes instantly and in a timely manner;
- implementation of the developed information education medium in general school and pre-school education institutions, which will include and take into account the pedagogue's working place, WI-FI areas with fast Internet, common electronic information network and electronic document circulation;
- provision of remote e-learning for students, access to modern education resources, including that through the development of "cloud" storages, network of media libraries and media centers; equipment of libraries with modern education manuals and resources;

### **3. RESULTS AND DISCUSSION**

Having analyzed the text of the municipal program "Development of the Education System of Berezovsky City District till", the conclusion can be made, and the implemented items of municipal policy in the field of information provision can be disclosed.

Implementation of the program of efficient assessment of educational processes at the local authorities level allows the operative analysis and efficient impact on the system development and education quality. Today, these tasks are being actively implemented in two aspects and directions.

Through education management in education institutions, the "e-log" and "e-diary" program is implemented. This program allows teachers analyzing the student's knowledge and to record marks into the e-log and e-diaries on the educational institution Website. Students' parents and control authorities can obtain this information in public access that allows actively cooperating with parents and, in particular, responding to each student's underperformance timely. Control authorities can assess the adequacy of this or that point assigned by a teacher, or respond to parents' requests.

The pupil can also study his/her marks and homework openly on the education institutions Website. Parents can control homework performance and study learning programs used by this or that teacher. This program allows increasing the education quality and marks in education

institutions. The information provision of this task also develops actively, helping parents and students to work together actively, and professors and employees of Department of Education implement control measures in shorter terms and without paper circulation.

The task of creating the modern information and communication medium in schools, including the pedagogue's working place, WI-FI areas with broadband Internet, common electronic information network and electronic document circulation, is being actively implemented based on general school and pre-school education institutions. For these purposes, computer labs are created in schools and equipped with powerful state of the art equipment, allowing students to actively develop in the field of information technologies, and simplifying information search in the course of the learning process.

In addition, the teachers' workplaces are also being improved; now, teachers don't work with the log of records anymore, but have a possibility to publish marks and to give tasks to students in open access on the educational establishment Website. Each classroom is improved with interactive boards that allow saving time on filling with chalk, and instead, give a possibility to answer in the interactive mode, or placing test tasks as slides. This increases the level of information provision of education institutions, increases the information process level and the pedagogues' professional level.

The information technologies contribute to the implementation of interrelations of education institutions and of Department of Education through e-documentation. This managerial solution allows accelerating the submission, processing, and control over the activity of education institutions from the side of Department of Education and increase the population awareness.

Together with the items listed above, the task of provision of remote e-learning for students, access to modern education resources, including that through the development of "cloud" storages, network of media libraries and media centers; equipment of libraries with modern education manuals and resources is implemented in Berezovskyi City District in an extremely limited manner. The issues of concern include:

- low professional level of specialists for e-learning implementation;
- extremely limited financial base;
- poor development of the Website of Department of Education of Berezovskyi in Sverdlovsk Region in terms of interactive seminars, webinars.

With the purpose of revealing the issues of the insufficient level of information provision of the municipal administration processes based on Department of Education of Berezovskyi in Sverdlovsk Region, the monitoring was carried out. Its direction: based on the results of the survey carried out, to reveal the people's satisfaction with the quality of the municipal e-services provided on the Website of Department of Education of Berezovskyi in Sverdlovsk

Region, to learn the opinion of the employees of Department of Education of Berezovskyi in Sverdlovsk Region on reasons of inefficient information provision of the municipal education management processes.

The survey was carried out among parents of students in general school education institutions in November - December 2019. Sixty persons took part in the survey and the interview. The survey results were processed and grouped in Table 1.

Table 1 Results of surveying parents of students of education institutions of Berezovskyi

Question	Answer options	Prs./score	%
1	2	3	4
Are you aware of the Web portal of Department of Education of Berezovskyi in Sverdlovsk Region?	Yes	46	77
	No	14	23
How often do you use services of the Web portal of Department of Education of Berezovskyi in Sverdlovsk Region?	Never	18	30
	Rarely	29	48
	From time to time	9	15
	Constantly	4	7

The results of surveying parents concerning their awareness of the existence of the Internet resource of Department of Education of Berezovskyi in Sverdlovsk Region are given on Figure 1.

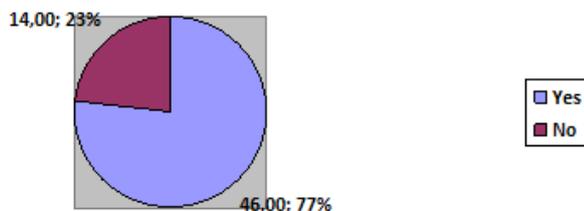


Figure 1 Population awareness on the existence of the Website of Department of Education of Berezovskyi in Sverdlovsk Region, %

The data given on Figure 1 demonstrate that the considerable part of the respondents is aware of the existence of the Web portal of Department of Education of Berezovskyi in Sverdlovsk Region. This proves the high level of awareness and skillfulness of Berezovskyi City District population.

Frequency of visiting the Website of Department of Education of Berezovskyi in Sverdlovsk Region by parents is given on Figure 2. Number of parents regularly using services of the Web portal of Department of Education is

only 7 % of the respondents. 48 % and 15 % use the Web portal services rarely and from time to time, respectively. 30 % of respondents never visit the Website. This statistics this Website low efficiency and, as a consequence, low population awareness about the municipal education.

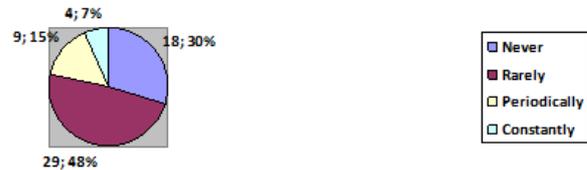


Figure 2 Frequency of visiting the Website of Department of Education of Berezovskyi in Sverdlovsk Region by parents, %

The most popular sections of the Web portal of Department of Education of Berezovskyi in Sverdlovsk Region, in parents' opinion, are given on Figure 3. The survey results revealed that the most popular section was "Feedback" - 25.6%. 23.2% and 20.5% fall on sections "Information for Parents" and "Regulatory Acts", respectively. The main factors of active linking to these sections is the possibility of communication with the educational sector authorities, learning about the working hours, learning the information about the activity of local education authorities and education process and education work regulation. The Website inserts "Municipal order" is, first of all, interesting to staff of general school and pre-school education institutions – 7.7%, and sections "Events announced" and "Photo Album" allow obtaining new information about the city life - to 5.1%. Therefore, cooperation and communication on the issues of concern with the municipal administration authorities in the field of education are the most important for the population. The actuality of sections "Feedback" and "Regulatory Acts" is in the lack of informativity

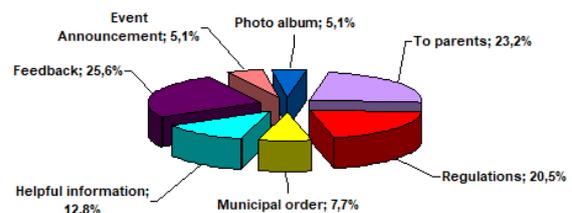


Figure 3 Sections of the Website of Department of Education of Berezovskyi in Sverdlovsk Region that are visited by population the most frequently, %

concerning education and the need for solving issues related to the educational process provision in real time. The assessment of the relevance quality of the information for parents on the Web portal of Department of Education of Berezovskyi in Sverdlovsk Region is given on Figure 4.

No one of the respondents gave a positive assessment of the information received on the site. 82.1% of the respondents find it rarely, and 17.9 %, periodically.

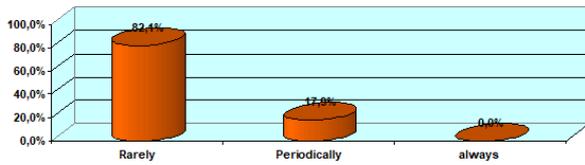


Figure 4 Resulting quality of search for the required information on the Website of Department of Education of Berezovskyi in Sverdlovsk Region by population, %

The survey demonstrated that the Web portal did not perform the main result of activity of the municipal administration electronic resource. This proves the low

level of work of Department of Education authorities in terms of population information provision, the insufficient information availability and information openness level. These issues decrease the possibility of the efficient activity of Department of Education in solving issues of parents and children, arising in the learning process.

The Website users expressed to wish to take active part in the development of the Website for Department of Education. In opinion of the respondents surveyed, the Website data lack informativity and do not fully comply with issues that are important for the population. Answers to the question causing concern in parents, "Which e-services, according to the citizens, should be added to the Web portal of Department of Education of Berezovskyi in Sverdlovsk Region" is given on Figure 5.

According to the data given on Figure 5, parents want to see the comprehensive variant of "municipal e-government" on the Website of Department of Education of Berezovskyi in Sverdlovsk Region

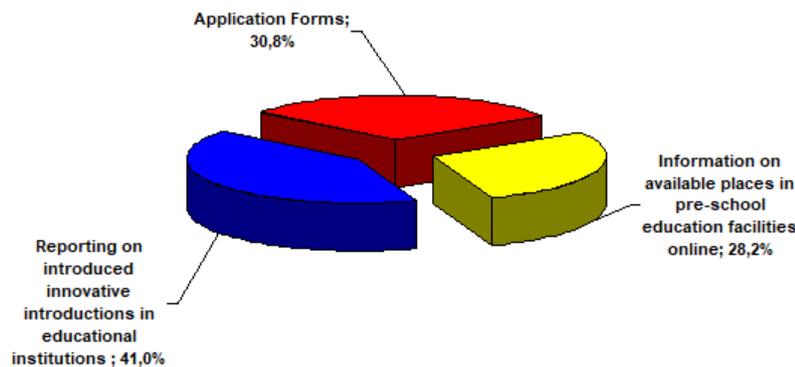


Figure 5 Information, which, according to the population, should be added to the Website of Department of Education of Berezovskyi in Sverdlovsk Region, %

the region is a full-fledged version of "municipal e-government". Respondents surveyed are conscious about the issue of development of educational process and methods applied by Department of Education in this field. This information implementation will contribute to the successful interaction of authorities and population in educational sphere development.

In addition, the possibility to solve the issue of submission of the required documents in e-form, that will simplify and

accelerate the process of e-documentation circulation, is important for parents.

Results of parents' answers on the quality of providing the information e-services in Department of Education of Berezovskyi in Sverdlovsk Region appeared to be expectative - they are on the low level (Figure 6).

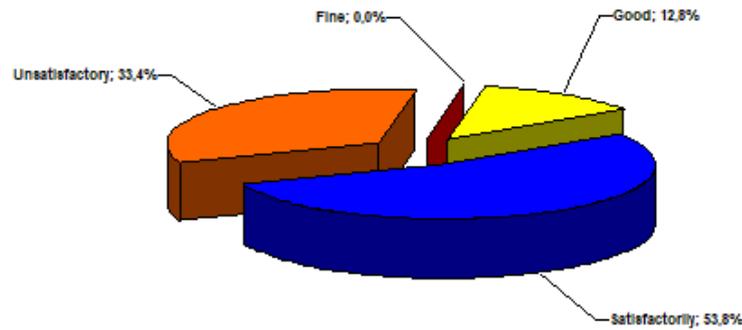


Figure 6 – Assessment of the level of providing the information e-services in Department of Education of Berezovskyi in Sverdlovsk Region by population, %

The considerable part of the respondents considers the level of providing information e-services in Department of Education of Berezovskyi in Sverdlovsk Region satisfactory – 53.8%, and 33.4%, unsatisfactory. Only 12.8% parents answered that the level of providing information e-services was "good."

It should be noted that the use of digital technologies in the municipal education management is carried out in terms of the program "e-government." This program provides for the involvement of broad layers of population into the process. This means that the use of information and network technologies will allow carrying out the constant dialogue

with education service consumers. Department of Education and general school and pre-school education institutions actively develop the work parents and pupils by means of the "e-log" program, which allows teachers and parents interacting actively in the children's leaning process. Eight employees took part in the survey of staff of Department of Education of Berezovskyi. The employees were asked only one question, "Main reasons of the low level of information provision of Department of Education of Berezovskyi in Sverdlovsk Region".

The survey results have been analyzed and are given in Table 2.

Table 2 Results of survey of employees of Department of Education of Berezovskyi in Sverdlovsk Region

Variants of causes	Score	%
Absence of the program of informatization of Department of Education of Berezovskyi in Sverdlovsk Region (movement towards information learning, online education programs)	45	26.8
Absence of the separate string "Informatization of the municipal authority of Department of Education" in local budget of municipal education	43	25.6
Lack of measures and methods of innovation of information provision of the municipal administration of Berezovskyi in Sverdlovsk Region in local education sector	29	17.3
Low level of technical qualifications of employees of Department of Education of Berezovskyi in Sverdlovsk Region and education institutions	15	8.9
Low level of innovation computer equipment implementation and maintenance (repair, system support, information control organization) of local authorities	14	8.3
Low level of professional competency of specialists in the field of information provision or lack of the required number of specialists	22	13.1

#### 4. CONCLUSION

The results given in Table 2 demonstrate that the considerable part of employees specifies the absence of the system of measures and methods for information provision development as the main reason of the low level of information provision of Department of Education of Berezovskyi in Sverdlovsk Region. 17.3% of the respondents share this opinion.

The less popular is the issue "Low level of professional competency of specialists in the field of information

provision or lack of the required number of specialists" - 13.1%. The survey analysis demonstrated that Department of Education of Berezovskyi in Sverdlovsk Region is not completed by specialists of adequate professional level in the field of information technologies.

The most unpopular answers were the following reasons: "Low level of technical qualifications of employees of Department of Education of Berezovskyi in Sverdlovsk Region and education institutions" and "Poor level of implementation and servicing of innovative computer equipment (repair, system support, information control organization) of local authorities".

The study carried out allows making the following conclusions:

1. increasing the municipal education management efficiency is going hand in hand with digital technologies, which, in its turn, requires amendments in management principles and methods. These changes are being implemented not efficiently enough on the municipal level.
2. Factors that conditioned this situation on the municipalities level are explained, to the most extent, by the low level of information culture in the managerial activity.
3. The absence of uniform strategic measures, aimed at the formation of IT competencies of municipal employees in the field of education management, should be characterized as a separate challenge. The employees of Department of Education consider the poor qualifications of staff in the field of educational programs, developing informatization skills, to be the main cause of low efficiency of digital technologies implementation. It is crucial to resolve this issue because it will help increasing the efficiency of Department of Education, improving the Website informativity and easiness to use, increasing the quality of municipal e-services.
4. The need of increasing the budget financing of information provision for the employees of Department of Education should be also specified. Solving this task will allow extending technical capabilities for the successful functioning of the information resource of Department of Education of Berezovskyi in Sverdlovsk Region.
5. The Website of Department of Education of Berezovskyi in Sverdlovsk Region lacks some online services, e.g., those related to the direct contact with parents and the site visitors.

The study conducted demonstrated that the digital technologies implementation into administrative processes in education contributes to the integration of common efforts of parents and management authorities, increases the innovative level of education establishments, and simplifies control from the side of local authorities. And, which is crucial, it boosts the education system development both on the municipal level, and nationwide.

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