

Transformation of pedagogical activity management in conditions of uncertainty

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Abstract. The purpose of the article is to analyze the management of pedagogical activity in conditions of uncertainty, to determine the factors of uncertainty, their content and impact on the management of pedagogical activity, to high-light the features of transformations in the management of the educational process in conditions of uncertainty. The objectives of the study include the analysis of sources about the pedagogical activity management in conditions of uncertainty, the definition of the concept of “transformation of pedagogical activity management”, the definition of uncertainty factors, the identification of transformations in the pedagogical activity management in conditions of uncertainty. Research methodology: a comparative analysis of theoretical and practical sources on the management of pedagogical activity has revealed the lack of attention in modern research to the disclosure of the management of pedagogical activity in conditions of uncertainty; the method of theoretical analysis allowed us to identify uncertainty factors and their impact on the management of pedagogical activity; the method of pedagogical observation was used to determine the features of transformations in the management of the educational process in conditions of uncertainty. The transformation of pedagogical activity management is understood as the ongoing transformations in the educational environment that occur as a result of certain social and pedagogical changes, which can be both chaotic and purposeful, and arising from internal and external sources which actively influence the management process.

Keywords: Pedagogical activity · Uncertainty · Transformation · Uncertainty management in pedagogical activity.

1. Introduction

Uncertainty as the absence or incompleteness of information about something is manifested in various spheres of human activity, including the management of pedagogical activity. In modern political and socio-economic conditions there is an accelerated type of obtaining scientific knowledge. Global digitalization of education and other innovative transformations in human life have a significant impact on the organization of educational activities, lead to an increase in the number of uncertainties in the educational environment, which reduces the effectiveness of pedagogical activity management (Rezer, 2021). Uncertainty factors must be taken into account when designing and managing pedagogical practice in order to obtain a high-quality learning result, which is influenced by external and internal transformations and ideological metamorphoses (Bolotova, 2007).

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V. Heisenberg and E. Schrodinger formulated the uncertainty principle for the natural sciences. There is an assumption that uncertainty is a fundamental property of nature and is inherent in human nature itself (Kojaspirova, 2021, p. 132). In scientific works, uncertainty is understood as a category that reflects the absence of material or ideal order. It should be noted that in pedagogical activity, a distant educational result is already the uncertainty that a teacher has to face during the entire pedagogical practice. It is this circumstance that characterizes the management of pedagogical activity as the main feature in professional activity in education.

According to many researchers the manifestation of uncertainty in social phenomena is influenced by the following significant aspects:

- the dependence of life activity on events that cannot be foreseen or predicted with complete certainty;
- possible alternatives in social and pedagogical activities that change the ideology and paradigm of education development;
- the complexity and relativity of the analysis and measurement of the impact of uncertainties on the management of pedagogical activity due to the remoteness of the educational result;
- the lack of any forms and grounds for making managerial decisions and choosing actions in the current situation;
- the risk of failure in life (Starichenko, 2020; Murzina, 2020; Madera, 2014; Waskowska and Karpova, 2019).

The state of uncertainty has a peculiar effect on the development of society. Education in general and the management of pedagogical activity in particular play an important role in the formation of uncertainty (Malinina, 2012; Sousa et al., 2020).

According to Kondakov & Kostyleva, a global educational experiment in the history of mankind is currently taking place, which has covered many countries of the world, including 90% of kindergartens, schools, colleges and universities of the world; the total enrollment of students has exceeded 1.75 billion people and more than 200 million teachers. These data convincingly prove that it is the global nature of digitalization of education as a factor of uncertainty that has a significant impact on the transformation of pedagogical activity management in modern conditions (Kondakov and Kostyleva, 2019; Warschauer, 2012).

However, the COVID-19 pandemic became precisely the catalyst that, due to preventive measures and restrictions, led to the urgent need to restructure the presentation of educational information exclusively with the help of information technologies and digital educational resources, which required some transformations of pedagogical activity management.

However, the analysis of sources has shown that most authors study the management of pedagogical activity from the perspective of traditional approaches adopted in the management of the education system: from the perspective of systemic and process approaches. In Russian science the authors, such as A.G. Asmolov, L.S. Vygotsky, A.N. Leontiev, S.L. Rubinstein, regarded that the psychological and pedagogical aspect of pedagogical activity management should be traditionally considered within the framework of the activity approach (Grossman, 2011, p. 4).

Several interesting researches were devoted to learning strategies and management mechanisms in the digital educational environment. The authors in those works address the issues of the introduction of digital didactics into the educational process and point to this phenomenon as a new factor of uncertainty in pedagogical practice in the virtual space (Blinov et al., 2019; Devine, 2014). The figure is considered as a didactic unit of educational information, and digitalization is interpreted as the emergence of global problems in education that need to be solved in conditions of uncertainty (Liu et al., 2020; Woldeab et al., 2020; Zinchenko, 2007; McLuhan, 1988).

It is necessary to support the position of the authors, who paid their attention to the fact that in the management of pedagogical activity it is necessary to understand the importance of feedback and the

mechanisms of its implementation. They become especially relevant during the transition of education into the digital environment, which significantly rebuilds educational relations. This circumstance is determined by the fact that there is a danger of copying some pedagogical mistakes, which can be made in the traditional teaching, during the transition to a digital educational environment where those mistakes can be transformed or aggravated and reduce the quality of pedagogical activity management (Bearman et al., 2020; Dron et al., 2004; Hattie and Clarke, 2018; Wiggins, 2012).

The analysis of theoretical sources and other documents shows that in scientific works about the management of pedagogical activity in conditions of uncertainty, not enough attention is paid to the disclosure of uncertainty factors and determining their impact on the management of pedagogical activity. The works also do not investigate the peculiarities of transformations in the management of the educational process in conditions of uncertainty.

The purpose of the study was to conduct a theoretical analysis of the management of pedagogical activity in conditions of uncertainty, to determine the factors of uncertainty, their content and their impact on the peculiarities of transformations in the management of pedagogical activity.

To achieve this purpose, it was necessary to solve the following tasks:

- to analyze the sources devoted to the theoretical and practical aspects of the management of pedagogical activity in conditions of uncertainty;
- to identify the main factors of uncertainty in the management of pedagogical activity and their content;
- to propose a definition of the transformation of pedagogical activity management;
- to highlight the features of transformations in the management of the educational process in conditions of uncertainty.

The hypothesis of the study is formulated as follows: transformations in the management of pedagogical activity occur under the influence of uncertainty factors, which have some forms, content and features of their influence on the management of the educational activity in conditions of uncertainty.

2. Materials and Method

The following methods were used to solve the tasks:

- the method of comparative analysis was used to study the sources devoted to the theoretical and practical aspects of the management of pedagogical activity in conditions of uncertainty;
- the method of theoretical analysis was applied to determine the factors of uncertainty in the management of pedagogical activity and to determine their content;
- the method of pedagogical observation made it possible to identify the peculiarities of transformations in the management of the educational process in conditions of uncertainty.

3. Results

The digital educational environment has affected not only the quality of education, but also had a significant impact on the process of managing pedagogical activity. As a result, there have been transformations in the management of pedagogical activity between all the participants in the educational process. Millions of participants in educational relations during the pandemic simultaneously became hostages of virtual reality in the process of obtaining affordable education. On the one hand, the digital educational environment began to be considered as a social reality. On the other hand, it began to be considered as a modern mechanism for the transfer of educational information in the implementation of professional activities by teachers. This circumstance largely destabilized pedagogical activity and required the rapid formation of new digital competencies among teachers. As a consequence, there was an immediate transformation of the content of the organizational function of pedagogical activity management, which began to take place in a virtual environment due to demographic restrictions.

The digital educational environment is conditioned by the global digitalization of education, which has captured all countries of the world, and is a logical continuation of the process of globalization in various spheres of life. The use of the method of comparative analysis in the study of the main management factors of traditional and distance learning has made it possible to formulate the main characteristics of the global digitalization of education.

Global digitalization of education as a factor of uncertainty includes four main aspects that have a transformative impact on the main functions of pedagogical activity management:

firstly, it is a natural process caused by the technical and technological development of civilization at present;

secondly, the global digitalization of education is the transition of pedagogical practice to a new educational era, when the didactic unit of learning becomes a digit;

thirdly, it is a new type of responsibility for the results and quality of training of all subjects of the educational process, as well as the process of self-realization in the implementation of educational activities and their management;

fourth, the pandemic has rapidly destroyed traditional educational ties in pedagogical practice and professional activity of the teacher, as well as in the management of these processes and separate management functions.

The highlighted circumstances in modern pedagogical practice and certain aspects of the global digitalization of education can be viewed as new challenges and uncertainty that suddenly appeared in the pedagogy and had a transformative impact on the management of pedagogical activities and the main management functions: organization, control, planning, forecasting and motivation.

The professional activity of a modern high school teacher and the management of pedagogical activity is carried out in conditionally permanent uncertainties. These include the following processes and identified uncertainties affecting the management of pedagogical activity:

work in a digital educational environment that requires technological knowledge and knowledge of digital didactics from the teacher;

availability of demand from higher education for teaching staff with new competencies and digital skills;

decrease in the psychological and pedagogical activity of teachers in the online learning, which is due to a decrease in the communication and emotional activity of the subjects of the educational process in the digital educational environment.

The educational environment is a natural process of implementing the professional activity of a teacher. The educational process is characterized by different types of activities and educational relationships that develop when performing pedagogical practice. During the pandemic, the traditional educational process was significantly transformed and significant adjustments were made to the relations between the participants of educational relations, which affected the teachers' self-organization and the management of their own pedagogical activity in the new conditions.

Self-realization is always a process, the way of development and transformation of a person, which he or she chooses and carries out in one or another form of social activity and, above all, in professional activity due to such personality traits as independence, initiative, creativity, responsibility, organization, ability to interact, grace and consolidation in group activity (Afanasenkova and, Vasyagina, 2019, p. 26).

The main uncertainty factors that appeared in the process of managing pedagogical activity in the conditions of uncertainty and the digital educational environment are highlighted, and their content is disclosed, which is presented in Table 1.

Table 1. Uncertainty factors and their content in the management of pedagogical activity in the conditions of educational digitalization

The factor	The content of the factor
The technological factor of pedagogical activity management in the conditions of educational digitalization	Technical and technological support on digital media of educational materials in the professional activity of a teacher
The factor of the lack of emotional contact between the participants of the educational process and the management of the students' motivation	A new pedagogical practice without traditional emotional contact between the subjects of the educational process
The form of self-realization of a teacher in the management of pedagogical activity in a virtual environment	A new form of personal socialization in the digital educational environment. Virtual teacher self-realization process
The factor of ownership of digital design resources in the management of pedagogical activity	New way of thinking on the creation of electronic educational resources and textbooks
The factor of personal growth of a teacher in a digital educational environment	The possibility of realizing creative and scientific opportunities in pedagogical practice
The factor of transformation of pedagogical activity management functions	Changing the focus and content of the main functions of pedagogical activity management: organization, control, planning, forecasting and motivation

Source: The table is compiled by the author

For example, as a result of the influence of the uncertainty factor, such as the lack of emotional contact between the participants of the educational process and the management of the students' motivation, the problem of communicative adaptation of a person in the information society has arisen, which is being solved by representatives of different scientific fields. In modern labour psychology, professional self-realization implies:

- dynamics of the level of personal maturity and professional leadership of the individual;
- the need of the individual to realize and express his or her unique properties;
- formulation of criteria for assessing professionalism;
- reflection of the system of life meanings, goals and results obtained in professional activity.

4. Discussion

In fact, the COVID-19 pandemic has become exactly the mechanism that, as a result of the introduced preventive measures and restrictions, has led to the need for teachers and students to rebuild themselves urgently in giving and receiving educational information exclusively with the help of informational technologies and digital educational resources. Rapid integration into the digital educational environment has become the very trigger mechanism that has led to transformations in the pedagogical activity management.

The word 'transformation' from the Late Latin 'transformatio' means 'transformation, or metamorphosis', that is, the change of something or someone as a result of external or internal influence. Proceeding from that message, the transformation of pedagogical activity management must be understood as the ongoing transformations in the educational environment that occur as a result of certain social and pedagogical changes, which can be both chaotic and purposeful, and emanating from internal and external sources.

The digital transformation of pedagogical activity management includes the following main aspects:

- information exchange in the digital educational environment between participants of educational relations;
- formation of personalized learning content;
- providing access to training materials at any time for students;
- creation of digital didactics on the proposed digital resources and media;
- formation of teachers' digital competence necessary for working in a digital educational environment;
- formation of a new digital culture and digital ethics of management in professional pedagogical activity aimed at personal development in a digital educational environment, about which there are currently not so many studies.

The pedagogical observation of transformations in the management of the educational process in the conditions of uncertainty has shown that a number of features can be distinguished in the educational activity. They can be referred to as:

- the conditionality of transformations by powerful external factors – the globalization of education and the pandemic;
- formation of digital didactics in pedagogical practice as a consequence of the impact of globalization of education and the pandemic, which was expressed in the transformation of the way of transmitting and receiving educational information, focused largely on visualization and visual perception of educational content;
- a decrease in the emotional activity of subjects in the pedagogical activity management, which can negate nonverbal communication that arose in ontogenesis as an individual development of the organism and as a special mechanism for the protection of the individual;
- obtaining a new learning outcome based on digital teaching didactics and a new digital ethics of the educational activity management.

5. Conclusion

The conducted research of pedagogical activity management in conditions of uncertainty has shown that insufficient attention is paid to this problem in view of the complexity of determining external and internal factors of uncertainty in the educational process.

The uncertainty factors are determined, the content of which reflects the technical and technological support on digital media of educational materials; pedagogical practice without emotional contact between the subjects of the educational process; a new form of socialization of the individual in the digital educational environment; the need for thinking changing when creating electronic educational resources; a change in the orientation and content of the main functions of the educational activities.

The highlighted features of transformations in the management of the educational process in the conditions of uncertainty can be used as directions for future research that will directly affect the main functions of pedagogical activity management, such as organization, control, planning, forecasting and motivation.

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