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**PROBLEMS OF PERSONAL CAREER GUIDANCE IN THE**  
**CONDITIONS OF DIGITALIZATION**

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**Abstract**

The paper reveals the methods of working on professional information, selection, education, training, social adaptation. With the digitalization of the economy, there is a redistribution of values of the socio-economic situation. It extends to the field of education (in particular, its view of society), feedback in the form of a response of society, the labor market, the person as an individual, the culture of society. The change of education in the field of digitalization aims at individualization and personalization, creation of individual trajectories in the educational field, combining formal, non-formal and informal education. The problem of "early multiprofessional orientation" of an individual is considered, which requires high educational and professional mobility, as well as the value bases of career guidance in the context of digital transformation. The research of this work is devoted to the development of platform solutions in career guidance as actual opportunities for the convergence of micro- and macro-level support for the construction of personal educational trajectories. As a result, the studied aspects manifest themselves and act as a "catalyst" of transformation at the level of economic, moral and spiritual potential of society and civilization as a whole. The article summarizes the values of choosing a place of study and work by individuals, motives for choosing a profession, as well as what difficulties can be likely encountered when choosing a profession in the modern world. Models for building career guidance work with the use of digital tools are proposed..

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## 1. Introduction

At the moment, the world's population contains as many as six generations, the youngest of which is Generation Z, which includes children and teenagers up to about 14 years of age. They can be called the children of the digital revolution. Facts indicate that these children are starting to master gadgets and the internet earlier and earlier. For them, it is not a set of technologies, but an environment and a part of their lives, contradicting the lifestyle of their parents. This all suggests that a new social situation of development has emerged. There are new psychological contexts and phenomena, new forms of relationships, and a shift in social practices accepted in the culture. The Internet for children is a new cultural tool (personality development in the conditions ...). Before the Internet era, children's development was based on the child-parent or child-child scheme, but at the moment the Internet has intervened in this scheme. It is likely that in the near future, the assessment of child development will be based on how a child navigates the digital sphere, which actively influences the way of thinking of a modern child and the formation of his/her personality. On the Internet, a child is actively searching for his or her "I", mastering his or her social roles. Digital transformation can significantly change the field of socio-professional self-determination of an individual.

Digitalization affects the economy, creating different options for the development of social and labor roles and forms of activity creation, the convergence of professions and the elaboration of multiprofessionalism. The change of education in the field of digitalization aims at individualization and personalization, creating individual trajectories in the educational field, combining formal, non-formal and informal education. In addition to the usual (analog, real) area of professional self-determination, there is a new branch, i.e. digital (network, virtual) environment, which is fundamentally different from the analog one. Due to the growth of digital technologies in our time, the number of various professional-educational and career trajectories is growing unbelievably (Sergeev et al., 2020). But there is still a strong impact of the past stage of an institutional transition "school – vocational school/higher education institution", "vocational school/higher education institution – workplace". Due to it, the goal of self-determination remains associated not with the internal process of growing up, but with the achievement of a certain age limit. The tasks of choosing professions also become much more complicated. In circumstances of general uncertainty, the object of design is no longer a definite choice or even an individual professional plan, but a "fan" of variable individual professional plans. Their creation will require, on the one hand, the development of the idea of "early polyprofessional orientation" of a person, on the other hand, training in using modern digital technologies. Such fan transitions require high educational and professional mobility. The problem of the value bases of career guidance is greatly complicated in the context of digital transformation.

The goals and projected outcomes of career guidance work are formed by a set of basic values. The intensive development of digital technologies, tools and services has a tangible impact on all spheres of human life, including the construction of individual career guidance trajectories. This phenomenon of "the influence of tools on goals" in some cases leads to changes in basic values. When designing the system and evaluating the results of career guidance work, the threat of a transition from "man-centrism" to "datacentrism" increases. In this case, a specific set of quantitative and qualitative indicators,

determined by the current social trend, rather than a person's personal qualities, his/her freedom of choice, self-determination and talent are taken as basic values and benchmarks. The values on which the management system is based are inevitably projected to the level of controlled actions. The result of underestimation of a person's free, independent and responsible choice, in combination with excessive trust in "big data", can be the so-called "automation" of professional and educational self-determination based on the use of digital systems (Sergeev et al., 2020). Protection from such situations, fraught with the loss of humanity in a person, should be the preservation of humanistic and socially directed values of vocational guidance work. They include maturity, independence and responsibility of choice, professionalism and individual self-realization, balance of interests and goals, social partnership. In general, it is important to understand and to take into account the risks of "digital vocational counseling", indicating its exclusively recommendatory nature, for example, by legislative means (Rezer, 2021). An instrumental transformation and a system transformation are mutually complementary ways of career guidance development in the digital environment.

The instrumental transformation combines the introduction of digital tools in the area of conventional forms and modes of career guidance combined with the definition of the profession itself. For example, the following toolkits can be used:

- i. Internet;
- ii. "bulletin boards";
- iii. "internet facilities";
- iv. Websites of recruitment organizations;
- v. other digital resources.

They help to increase the career guidance usefulness of professional information and professional (self) navigation of students, their parents (Sergeev et al.). Profound change is a way based on the creation and growth of fundamentally new (digitally born) career guidance technologies, which rely on high-quality modern ways of intelligent digital tools. Big changes in the process of digital transformation of career guidance work can be associated with the transition to the current generation of digitally born career guidance technologies (Lyz, 2014).

The first generation of career guidance technologies born in the field of digitalization has found its use in the context of instrumental change. Its basis is the adaptation of well-recognized career guidance forms and types of work, which makes it possible to use all available information and communication technologies (ICT). The creators and users of this type of digital solutions are teachers, psychologists, counselors, who are involved in the process of supporting children's professional definition of what to be, including young people and adults (Rorty, 2017).

The next generation of "digitally born" career guidance technologies includes a more diverse change in the process of promoting professional self-determination, which involves obtaining qualitatively new vocationally significant results. The process of developing this type of technology requires an understanding of the vocational guidance potential of basic digital technologies and the necessary advancement in vocational competence. This will allow radically modifying existing forms and methods of work in the field of career guidance or creating new ones. There is a justified need to create a "mix" of highly specialized development teams, which will create a synergy of qualified career guidance

specialists and IT specialists (Kibrik, 2010). The result of the work of such teams is the emergence of digital career guidance products that combine:

- i. digital technologies aimed at solving vocational guidance tasks;
- ii. digitally born career guidance technologies aimed at maximizing the potential of digital tools.

In the visible future, we can expect the emergence of another type of digital-born career guidance technologies (Medova, 2020). They involve not only the delegation to digital technologies (primarily artificial intelligence) of numerous functions of psychological and pedagogical support of professional self-determination, but also the emergence of digital assistants with the signs of a "third subject" of the career guidance process (Popper, 2012). But the intellectual "digital subject", which accompanies the process of an individual's self-determination, can, according to the situation, take many key "images": a teacher-mentor, a "senior friend", a tutor, a navigator-tracker, a trainer, a master, a partner, etc., reflecting the user's preferences in its transformation. Here artificial intelligence will take the first place as a vector of self-development (including in the form of context in messengers and other platforms). Other modern solutions are also likely, for example, the development of "digital centaurs" models in the process of self-determination and (or) its control. These are also the promotion and use of personal "digital twins" that expand people's professional opportunities or that solve auxiliary issues of professional self-determination for the person. If these scenarios are realized, the notion of self-definition of the individual is likely to change significantly.

## 2. Problem Statement

The system of operations, procedures, techniques of establishing social factors, their systematization and analysis are accepted as the methodological basis of the research. The methods of constructing social indicators were chosen as methodological tools. Emphasis was placed on descriptive sociological research, i.e. a more complex type of sociological research, which allows making a relatively holistic view of the problem of career guidance in the conditions of digitalization of the industry, its structural elements (Schlegel, 2015). A comprehension and a consideration of the proposed comprehensive information will help to more deeply justify the choice of means, forms and methods of management of social processes. The object of research was chosen as a social reality, the social life of an individual in the process of origin of self-determination. According to this, the central category is society, understood as a multivalued system of subsequent labor relations and processes, the fundamental characteristics of which become universal categories (Nikolaeva, 2014).

For the characterization of society, social life, the moduses of time are essential when the present is represented in value, the future is expressed in purpose, and the past is associated with the category of "meaning". Therefore, the categories are historicized, deprived of their timeless form and localized in concrete-historical forms of life. Such treatment of categories significantly levels their significance and universality, catalyzing their tendency to "regionalization" and, consequently, to the isolation of those of them, which are inherent only to one location or a group of homogeneous professions. The process of career guidance regionalization of categories has not bypassed the sociological basis (Lange et al., 2020). It, without denying the need to study the past and the future, nevertheless focuses on the present, on the time and space felt and perceived by the individual, on what is the subject of his theoretical interest, his

involvement with his self-determination. Focusing on the existing social "digital" reality increasingly emphasizes the sociology of life and, accordingly, requires clarification of the range (models) of tools inherent in it.

### 3. Research Questions

In terms of applicability of sociological categories, the following should be applied:

- i. Quality categories, which show the degree and level of mastering the future profession, the effectiveness of one's existence and ensuring the rational organization of social, group and individual life due to perspective self-determination. Without their use, it is impossible to carry out their transformation within the framework of "present – future", comparisons of the type "I am now – I am in the profession", to understand what and how characterizes the degree of optimality of its definition in conditions of development of these or those social groups, institutions, organizations.
- ii. Categories of objectivity (social relations, social development, social processes, social phenomena and institutions), which concretize the essence and content of the historical epoch in which the very act of self-determination in the future profession takes place. They reflect the main features and specifics that are characteristic of the whole world, but in the context of regionalization. With the help of these categories, it is possible to analyze such aspects as the influence of certain forms of social life, forms of existing political power, historically established types of territorial preferences of the labor market.
- iii. Categories of subjectivity (consciousness, personality), which characterize an active, creative (or potentially creative), interested beginning in the activity of society. They in their formulation of the question contain the most general reference points of their own educational trajectories, giving a tentative effect in the future.
- iv. Categories of changes (self-regulation, socialization, professionalization, conflict of interests), which characterize the mechanism, direction, ways and methods of personal changes. These categories claim to reflect personal creative complicity in the transformation of the surrounding world, which is expressed in the application of such universals as forecast, anticipation of one's place in the future social organization. To a certain extent, they express the categories of modality related to the ideas about the necessity, possibility and target settings of current self-determination.

Platform solutions in career guidance as a relevant opportunity for the convergence of micro- and macro-level support of professional self-determination is the topic of this paper. The aim is the problem of career guidance of the individual in the conditions of digitalization of education and the industry as a whole. For the study, we took the works of authoritative authors who expressed their views on the problems of career guidance of the individual in the modern world (Tatyanchenko, 2016).

The research identified key factors that influence an individual's career choice in a digitized environment.

#### 4. Purpose of the Study

Platform solutions in career guidance are a relevant opportunity for the convergence of micro- and macro-levels of professional self-determination support.

Unlike the integration, convergence does not imply mechanical unification of objects into a single whole, keeping their original specificity. Creation, application and development of platform solutions in career guidance provide an opportunity to combine into one whole (on the basis of unification) and thus to increase the effectiveness of the whole complex of building personal career guidance trajectories based on the successful organization and implementation of work in a scalable format (educational "ecosystem", industry, geolocation). This includes:

- i. formation of a single regularly updated professional-information digital environment (oriented to a wide range of user groups), which ensures their navigation in the over-saturated, insufficiently organized career guidance space;
- ii. hierarchical regulation of all career guidance programs and events (federal, regional, sub-regional, local level) based on the development of a common calendar of events and the concept of registration of participants;
- iii. development of a common base of normative-legal and program-methodological provision of vocational guidance work in the region, accessible to absolutely all participants;
- iv. provision of a balance of real and virtual configurations of networking, professional counseling, professional diagnostics and other forms of interaction (including taking into account the regionality and specific categories of career-oriented persons);
- v. increase in the interest, activity, self-sufficiency and awareness of students in the course of professional self-determination by creating tools for the multifaceted development of online career guidance content (career guidance startups, online contests of career guidance videos, "memes", etc.);
- vi. concentration and increase of the digital footprints of absolutely all participants in the career guidance process;
- vii. constant multilevel observation of the progress and effectiveness of vocational guidance work, diagnosing the results and problem areas in the process of professional self-determination of students.

At the same time, it is necessary to take into account the development of such career guidance platforms' capabilities, and the increase of their social relevance exacerbates the risks:

- i. integration of career guidance work with the virtual environment with further suppression of real contacts with the self-determined;
- ii. reduction of the diversity of forms and means of career guidance work within the framework of the educated platform;
- iii. emergence of "monopolies" of career guidance influence on the behavior of the self-determined, as a user of such platforms in the interests of certain individuals, social groups or institutions.

## 5. Research Methods

### 5.1. Variety of tools, methods and means of building career guidance work in the digital environment

All possible variants of building trajectories of career guidance work in the virtual environment are acceptable, differing in quantitative and qualitative characteristics of the prevalence of "virtual" or "real" components, and certain benchmarks focused on achieving what "digital" essence of career guidance is aimed at.

Let us take a look at some of the models with their characteristics:

- i. "Additional means" implies irregular or regular use of individual digital means in career guidance work in order to solve individual cases.
- ii. "Automation of supporting processes" is based on the use of digital resources and services as tools for career guidance programs, projects, a set of implemented activities or single events. Both models have all chances to be defined as the group of instrumental transformation.
- iii. "Combined career guidance" is a set of configurations of career guidance work in terms of presentation and support of self-determination, realized by means of real interaction, and virtual forms of space for work. Such symbiosis can be either a spontaneous "parasitic" phenomenon or a fertile scientifically grounded and methodologically worked out ground. Manifestations of this model in practical application can strive for either instrumental or systemic transformation.
- iv. "Hybrid (mixed) career guidance" implies the research and application of the latest forms of supporting the trajectories of professional self-determination of an individual, providing a methodologically sound principle of sequence and/or synergy of activities in the real and virtual environment.
- v. "Virtual career guidance" is a migration of tangible tools to support the trajectories of self-determination of an individual in the future profession in virtual space; co-creative space with augmented reality can be effective for similar special cases, such as a professional inclusive orientation of persons with disabilities or professional work with residents of hard-to-reach places. At present, the latter two models envision a systemic transformation of career guidance in the digital environment and are promising. Within the framework of any of these models, it is possible to use a variety of technologies (including "digitally born"), forms, ways and means of supporting professional self-determination, the variety of which is increasing with the development of digital transformation. In this case, the entire period, in vocational guidance work, especially in educational vocational work, should preserve the possibility of each self-determined person to acquire the experience of vocational guidance and inclusiveness in the real vocational guidance environment. Hence, with the transformation of society in all its manifestations from "realities" to "digital", the principle of harmonization of forms and methods of interaction (contact, hybrid, virtuality) in career guidance work becomes more and more relevant. It is possible to assume that in a particular stage of formation, as a counterbalance to excessive virtualization, there is a need for specially created "decrypted"

spaces of self-determination, where a strict ban on the use of any digital means will be established.

Therefore, in the realities of globalization of the "virtual continuum", there is a continuous reassessment of values (and maybe even the transformation of data and needs of the individual!!!) of socio-economic realities. This is reflected in the field of education (tripartite interaction "SOCIUM-INDIVID-EDUCATION"), feedback in the form of a response of the society, the labor market, on the person as an individual, the culture of society. The inevitable change in the fundamental principles of education in the field of digitalization aims at individualization and personalization, the creation of individual educational trajectories, combining formal, non-formal and informal education. The necessity of an "early polyprofessional orientation" of an individual, requiring high educational and professional mobility, as well as the posteriorization (exteriorization) of the value bases of career guidance in the context of digital transformation, is substantiated. To achieve synergy of the individual and society, the aspects of instrumental and systemic transformation of "digitally born" career guidance technologies are defined. Platform solutions in career guidance are developed as relevant opportunities for the convergence of micro- and macro-level support of professional self-determination. The article presents the values of choosing a place of study and work by individuals with regard to regionalization, motives for choosing a profession, as well as what difficulties can be likely encountered when choosing a profession in the modern world. The stages of the digital transformation process in various industries are defined. Models for building career guidance work with the use of digital tools are proposed. Differentiation of "digital career guidance" markets has been carried out and 3 different target directions of career guidance work have been defined: "advisory", "educational" and "influencing" career guidance. As a result of the conducted research, the key factors influencing the choice of a person's profession in the conditions of digitalization were identified. The use of the proposed tools and models in the competitive environment of the market economy will provide freedom of disposal of the main individual opportunity of a person, i.e. qualification.

## **6. Findings**

### **6.1. Distinguishing the concepts of digital career guidance**

Three different target-oriented directions of creating individual career guidance trajectories ("explanatory", "instructional" and "effector" career guidance) respond to different categories of self-determined individuals, in terms of impact on career orientation, with a wide variety of desires and dispersion in terms of availability of personal resources. Owing to this, we can expect unbalanced development of the process of "digitalization" of different types of markets in the field of career guidance services, namely:

- i. prevalence of digitalization of the "explanatory" tool aimed at solving highly specialized tasks related to one-time support of a particular professional or vocational educational choice;
- ii. degradation of the "training" tool in vocational guidance, which requires considerable depth and systematizations and is therefore the most resource-intensive, combined with the low resource



endowment of the education system (excluding the space of local advanced projects at the federal level);

- iii. non-typical digitalization of "effector" career guidance (the "black swan" factor) (Semenova & Anisimova, 2020), which has a very large number of active and solvent customers, which are large companies and universities. Their consequence may be the formation of not typical developments and innovations in the field of career guidance, radically changing the picture of digital transformation as a whole.

## **6.2. Virtual experimentation with personal futures as a visible fashion of professional self-definition in the digital world**

Modernization of virtual reality and artificial intelligence technologies helps to make one's professional (and not only professional) future an object of visual research. With their help it is possible to get quite complete and personal information about the features of a person, using the data of various forecasts, the Internet. Intelligence will soon have the opportunity not only to make predictions in analytics, but also to show it in a more demonstrative form, as a probable scenario of the future of a certain person. Many such scenarios can be modeled, depending on what life, professional and educational steps will be made by us at different stages of our life.

## **7. Conclusion**

As a result, the stages of digital transformation processes in various industries, including career guidance work, have been identified:

- i. application of decentralized electronic resources and tools;
- ii. the emergence of platform and cross-platform tools and their oriented adaptation for solving vocational guidance tasks;
- iii. formation and use of specialized cross-platforms;
- iv. further integration of cross-platform "digital" solutions into real-world environments;
- v. convergence as a cohesion and interpenetration of qualities, emergence of similar properties in different objects and phenomena.

The introduction of platform solutions in the field of career guidance is gaining momentum, highlighting the need for consolidation and increased effectiveness in solving the multifaceted challenges facing career guidance. Combining these tasks makes it possible to cover all aspects of career guidance within territories, industries and educational ecosystems (including vocational and educational clusters and educational networks). The development of platform solutions for career guidance and their practical application open up new opportunities for:

- i. Systematic collection and analysis of information about the labor market, educational opportunities and student needs.
- ii. Development and implementation of personalized career guidance programs adapted to the needs and abilities of each student.

- iii. Cooperation between organizations providing career guidance services, educational institutions, employers and other interested parties.
- iv. Ensuring continuity of career guidance support throughout students' educational journey, from primary school to higher education and vocational training.
- v. Monitoring and evaluating the effectiveness of career guidance activities based on data collected using platform solutions.

By combining and increasing the efficiency of solving career guidance problems using platform solutions, a holistic and interconnected system is created that helps improve the quality of career guidance services, expand student opportunities and ensure a smoother transition from education to employment.

The models of construction of vocational guidance work use digital means, differing in numerical and qualitative parameters of the ratio of "digital" and "human" components, the fulfillment of which is aimed at the digitalization of the vocational guidance process:

- i. "Additional means" implies irregular or regular use of individual digital means in career guidance work in order to solve individual cases.
- ii. "Automation of providing processes" is based on the use of digital platforms, resources and services as a means of organizing career guidance programs, plans, complexes of activities or single events. Both models have all chances to be defined as the group of instrumental transformation.
- iii. "Combined career guidance" is a complex of configurations of career guidance work and self-determination support, realized by means of "live communication" and network forms of work. Such set can be either spontaneously formed and be eclectic, or scientifically grounded and methodologically elaborated. Depending on this, the practical realization of this model can strive for either instrumental or systemic transformation.
- iv. "Hybrid career guidance" involves the research and application of the latest (mixed, hybrid) forms of supporting professional self-determination, providing a methodically tested scenario of alternation and/or combination of activities in the real and virtual environment.
- v. "Virtual career guidance", shifting the process of support of professional self-determination in a virtual, co-creative space with additional reality, is able to be effective for similar special cases, such as a professional orientation of persons with disabilities or professional work with residents of hard-to-reach places. Currently, the latter two models envision a systemic transformation of career guidance in the digital environment and are promising (Sergeev et al., 2020). Within the framework of any of the above models, it is possible to use a variety of technologies (including digitally born), forms, ways and means of supporting professional self-determination, the variety of which increases with the development of digital transformation. In this case, the entire period, in vocational guidance work, especially in educational vocational work, should preserve the possibility of each self-determined person to acquire experience of vocational guidance and communication in the real environment. Therefore, with the development of digitalization processes, the principle of balancing contact, hybrid and virtual forms in career guidance work is becoming increasingly important. It is possible to assume that in a particular stage of formation, as a counterbalance to excessive virtualization, there is a

need for specially created "decrypted" spaces of self-determination, where a strict ban on the use of any digital means will be established.

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