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FORESIGHT TECHNOLOGIES IN THE DEVELOPMENT OF COMMUNICATIVE REFLECTION

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Abstract

The article is devoted to the problem of searching for innovative educational technologies aimed at developing key communicative competencies. Communicative reflection, being one of the key features of the "21st century skills", demands innovative communicative technologies for its formation and development, among which the authors of the article include foresight technologies. In the article their use is substantiated by the essential characteristics and innovative content of the foresight, as well as the operational structure and composition of methods that contribute to the development of students' communicative reflection. The article emphasizes the communicative and reflective potential of foresight technologies, discusses the positive and negative effects of the foresight method. Particular attention is paid to the value of open communication strategies for building variable images of the future. Foresight is considered as a technology that expands the variability of thinking, communicative and reflexive repertoires. The ethical potential of foresight technologies results from the use of open communication strategies built on the basis of dialogue and facilitation. Based on the review of scientific literature and their own research and teaching experience, the authors confirm the feasibility of using foresight technologies in both real and virtual communication environment. The use of foresight technologies in the educational process will allow to expand the variability of thinking, communication and reflexive repertoires, to make the transition from a closed to an open variable future strategy.

Keywords: Communicative reflection, innovative educational technologies, foresight technologies, group foresight, open communication strategies.

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1. Introduction

The increasing pace of modern development of the economy and society has led to a radical change in attitudes towards higher education, which today is aimed at the formation and development of human capital and knowledge management. Today, any prognostic or educational approach to education based on trends in social, cultural and economic development is relevant. A prerequisite for the effective management of information and knowledge as strategic resources is the search for new approaches to learning. It is assumed that university graduates who have the necessary skills and competencies to successfully complete their professional tasks should be able to understand the ever-changing realities of the world and be able to adapt to them. Training involves the creation of knowledge and the formation of key universal competences, most of which are based on reflection. Reflexive competences are formed on the basis of both cognitive skills (abstract thinking, a holistic vision of the problem, the ability to identify the links of the system elements with each other and with the external environment) and on the basis of social skills related to the ability to work with people in an individual and collective format, take into account their interests, convince and motivate (Shamsi, 2017). According to experts, the sphere of education, business and economics, "21st century skills" or "soft skills," is what "will help in the implementation of life plans, achieving career goals, the ability to respond to new challenges of the time and survive in volatile modern economics and chaotic business" (Sullivan, 2012). Regardless of the future specialist's field of activity, communication, creativity, critical thinking, and collaborativeness form the basis of the 21st century skills (Voogt & Pareja Roblin, 2010). One of the keys connecting characteristics of the "21st century skills" is communicative reflection.

2. Problem Statement

Modern society is characterized by a high dynamics of development of both the entire social system and its individual spheres. The most important area of modern society is education the specific parameters of which are innovative and focused on the future, which is reflected in the project "Foresight Education 2030". This project has had a wide resonance in publications of politicians, economists and specialists in the field of organization of education and educational technologies (Evzrezov & Mayer, 2014; Nestik, Zhuravlyov, & Yurevich, 2016). Today, foresight method is used as a systemic instrument of influence on the formation of the future, scientific and technological, economic, social, public relations, culture and education (Goux-Baudiment, 2016).

According to modern scholars, modern educational technologies are required for mastering innovative transformations in the field of vocational education, one of which is based on a psychological and pedagogical platform that allows adapting to continuous changes in the structure, content and management of education (Zeer & Symanyuk, 2016; Zeer, Lebedeva, & Zinnatova, 2016). In its turn, for the implementation of the psychological-pedagogical platform, modern technologies are needed, such as foresight projects representing the forecasting of the professional future based on the formation of competencies of self-education, professional personal development and self-actualization of cognitive abilities (Zeer, Lebedeva, & Zinnatova, 2016). The future as a category for learning is based on the specific, pragmatic context of the foresight, the condition and result of which is the expansion of the

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communicative, reflexive and behavioral potential of the subjects of the process. Formulating key postulates within the framework of the basic concepts of foresight research, M. Bussey focuses on the prospects of foresight in terms of expanding the range of possible strategies for planning and building the future, emphasizing the importance of mastering "open" behavior strategies in designing the future: "Strengthening identity stimulates activities as "relation patterning" (Bussey, 2013, p.66). Therefore, it seems appropriate to consider foresight as the basis for innovative educational technologies with high communicative and socializing potential.

3. Research Questions

The instrumental pragmatic potential of foresight technologies can be considered as one of the compelling reasons for their use in education. However, foresight technologies have, in addition to the above, a serious communicative-innovative and learning potential, they "are effective tools because they allow us developing concrete concepts ... they set the direction, goals and ethical guidelines of activity. ... When searching for the right answers, problems are considered in the general context of interests. This contributes to the emancipation of thinking and makes it possible to rely on different points of view...". "Closed" strategies weaken social and personal sustainability, "open" ones – strengthen" (Bussey, 2013, p.67).

Open and closed strategies for designing the future, which are essentially reflexive strategies, differ in their degree of openness to the adoption of alternatives in planning the future. Foresight technology helps subjects to make the transition from a closed strategy to an open one. Such a transition is provided by complex communication, in which there is an author's statement, critical listening, correction of understanding, as well as participation in a discussion that takes into account points of view and suggests their alternativeness – as a result, an open, interactive, facilitating communication is built, leading to new picture of the future, yourself and your activities in it. Closed strategies are based on the correctness of one point of view; all available positions are reduced to a common denominator. "Closed" strategies ... by definition, are tied to the dominant model"..., "open" strategies, in turn, imply inclusiveness and collectivism". ... in the presence of "open" strategies, the ethical aspect is on the agenda" (Bussey, 2013, p.68-70).

The significance of using foresight technologies should be noted, first of all, as technologies expanding the variability of thinking in the space of open communication strategies that promote the formation of both reflexive and communicative competences. Open communicative strategies are based on dialogue and facilitation; closed ones are based on manipulation and inhibition. Particular attention in foresight technologies should be paid to such form as corporate technologies. A distinctive feature of foresight technologies is its focus on discussion among its users, account for forecasting factors and scientific approach to training, as well as the fundamental nature of its content (Bishop, 2016; Hines et al., 2016).

The socio-psychological interpretation of corporate foresight as group reflection consists in exploring the mechanisms for open discussion of joint goals and ways to achieve them in order to adapt to changing internal and external conditions (Nestik, 2018).

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To understand these mechanisms, it is necessary to separate the concepts of communicative reflection and group reflection. By communicative reflection, we understand the form of thinking that provides awareness, analysis, regulation, interpretation and evaluation of both our speech activity and personal experience at the cognitive, emotional and behavioral levels, as well as of another subject, in the process of interpersonal communication and cooperation for effective social, intercultural and professional interaction. The subject of communicative reflection is an individual, a personality, a social individual who is included in group activities. Such a subject can reflect on the knowledge of the role structure of a group and positions of group interaction; their ideas about the inner world of other members of the group; their actions in accordance with 'I'-images, as well as knowledge about the ways of interaction with the objects of activity. Accordingly, the following types of reflection can be distinguished according to the objects of reflection: cooperative, communicative, personal and intellectual. All of these types are built on the basis of activity reflection.

Specifying the mentioned types of reflection in the educational process we can talk about the relevance of intellectual reflection in the processes of selection of knowledge and experience in order to solve educational problems. The presence of the reference person, not included in the interactive processes and processes of information exchange, actualizes the student's personal reflection. In the presence of interactive and information exchange, or joint collective activity, communicative reflection is actualized as the basis for effective interpersonal interaction, taking into account the correlation of the reflexive positions of the subjects of group interaction. Communicative reflection is a condition and result of the implementation of group learning methods that are an integral part of corporate foresight. It is important to note that a corporate foresight is possible if there is an organizer, mediator, or manager. In the educational process a teacher is often in this role.

The development of communicative reflection requires the use of special modern pedagogical tools that make up the semantic elements of foresight technologies. Among them a special place is occupied by mutual learning as a response to the challenges of the internal and external environment, their formulation and the search for individual and group ways of responding to them. The level of communicative reflection depends on their diversity and variability.

In a series of research questions, it is important to note the question about the grounds for classifying foresight technologies in education as innovative. Foresight technology in the field of education can be attributed to innovative educational technologies, if we consider innovation as a mechanism for obtaining new knowledge or a product that is used in practice and has social significance (Nestik, 2018). The presence of improvements in production methods or services, including information, characterizes technological innovations. Foresight technologies in education, in our opinion, belong to the group of technologies created on the basis of the integration of pre-existing communicative, information and educational technologies, while being innovative in their strategic orientation and potential. Regardless of the implementation of foresight, their goal is to monitor challenges, develop ways to respond to them, as well as predict their effectiveness.

Another research question concerns the connection of foresight technologies with reflexive technologies aimed at the formation and development of two key competencies – reflexive and communicative. One can agree with the authors, representatives of the approach called "social

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psychology of knowledge," who put reflexive technologies as the basis for communicative educational technologies, especially in terms of corporate foresight knowledge technologies (Zhuravlev et al., 2016).

The basis of corporate foresight is communicative reflection, which is its basic psychological mechanism. The socio-psychological interpretation of corporate foresight as group reflection consists in exploring the mechanisms for open discussion of joint goals and ways to achieve them in order to adapt to changing internal and external conditions (Nestik, 2018).

As a fundamental principle of foresight, most authors cite a group discussion, thanks to which various interpretations of the present and images of the future are carried out (Savina, 2016; Dorozhkin, Zeer, & Shevchenko, 2017; Nestik, 2018). The basis of group discussion is a group or corporate reflection based on the communicative reflection of experts, in the role of which the members of the group act. Collective reflection, analysis of joint experience and other similar phenomena become one of the key conditions for achieving high team performance and competitiveness of organizations as a whole (Zhuravlev & Nestik, 2012). While working collaboratively people can achieve more goals than individuals working alone (Voogt et al., 2015).

Among the methods that correspond to the principles and methodology of the group foresight in the educational process, we can name a number of methods aimed at the development of communicative competences. Then forming general cultural and professional competencies, it is necessary to employ methods of collective discussions, presentations of developed software products by students or a group of students, preparation of essays, organization of round tables and discussions, as well as other practice-oriented methods of active learning which model real professional situations and help the formation of analytical thinking and the reflexive position of students (Chupina, Fedorenko, & Pleshakova, 2017). In the modern educational process, they are used but not always associated with foresight technologies. More often they are positioned either as methods of collecting and processing monitoring information or as methods of interactive forms of learning, for example, the widely used Delphi method. To interactive methods aimed at stimulating individual and group creativity the methods of brainstorming, or game simulation can be attributed. Methods of the scenario planning of the future that are effective for the development of projective and communicative reflection are used in the modern educational process relatively rarely, despite their teaching and educational opportunities.

Foresight technologies are aimed not only at obtaining new knowledge, for example, in the form of reports, communications, recommendations or scenarios, but, first of all, at developing interactions between participants, at creating external and internal coherence, at developing a view of present and future situations related to other members of the group. Using of foresight technology in the process of teaching students, in the first place, allows developing systemic, analytical and critical thinking, predictability, increases cognitive interest, develops reflexive and communication skills, teamwork skills, and leadership skills. However, a foresight is not a prediction in a broad sense or a tool for creating a project. In contrast to the project activity, in which there are goal setting and goal achievement, in foresight technology the creative potential of the participants is not limited to the framework. Foresight is an open interactive technology, where the result of the work should be a certain development concept, a vector defining work for the long term (Knitel & Larionov, 2016). Foresight forms include round tables, work in mini-groups, polylogues, discussions, brainstorming, SWOT-analysis, etc., as well as the joint

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work of the participants not so much with the texts, as with the images and schemes. In doing so, students learn to generate ideas to describe both the expected future and possible strategies for achieving it. Foresight technologies are focused not only on obtaining new knowledge in the form of reports, presentations, recommendations, etc. In combination with other methods and technologies they help to activate students' analytical and reflexive thinking, form the ability to analyze and predict, and develop communication skills. An important result is the development of informal relationships between their participants, the creation of a single view of the situation, and in the process of interactive communication it is the formation of communicative reflection.

4. Purpose of the Study

The purpose of the article is to justify the use of foresight technologies in the educational process, aimed at the formation of key competencies, which are based on communicative reflection.

5. Research Methods

An empirical research conducted by us and devoted to the study of the effectiveness of foresight technologies in the development of communicative reflection of students of technical universities, made it possible to determine the peculiarities of the formation of an open communication strategy, to choose the most effective forms of foresight for the development of communicative reflection, to identify factors that have a positive and negative impact on the foresight results. The study involved 78 undergraduate students (technical specialties) of the branch of Federal State Autonomous Educational Institution of Higher Education "South-Ural State University" in Nizhnevartovsk.

The results of the study showed that the most effective open communication strategies are formed when organizing discussions on a complex communication scheme, in which the author's statement is supported by active listening to the audience and questions for understanding and which implies an obligatory critical reconstruction of the author's point of view when moderating the teacher as a communication organizer. Participants of the foresight sessions noted that discussion (for 76% of participants), polylogue (for 56% of participants), group reflection (for 49% of participants) were the most productive forms of interaction for them. When determining factors affecting the effectiveness of a foresight, it is noted that one and the same factor can have both positive and negative effects, for example: the socializing effect of a foresight is to achieve corporate cohesion, on the one hand, and interpersonal differences that arise, on the other; lack of practical experience of undergraduate students generates motivation to learn, on the one hand, uncertainty and reduced self-esteem, on the other.

6. Findings

Foresight technologies in education, in our opinion, belong to innovative social technologies aimed at the formation of key competencies implemented on the basis of communicative, information educational technologies.

The basis of foresight technology is communicative reflection, which is the basic psychological mechanism of group foresight. Foresight technology used in the educational process relies on the use of

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interactive and dialogue forms of teaching, as well as mutual teaching. The development of a collective dialogue based on various forms of reflection makes futurological forecasts more flexible and realistic, as noted by modern researchers (Nelson, 2010; Mack, 2013).

The factors influencing the results of the use of foresight technologies in the pedagogical process should include an orientation to social desirability, group stereotyping, an underestimation of the probability of events, associated, firstly, with the lack of social experience of students, secondly, with the lack of reflexive mechanisms. Here we can talk about intellectual reflection of both retrospective and perspective character. While even a high level of communicative reflection, in our opinion, can be accompanied by negative group effects.

Based on our own research and teaching experience, we can argue that the use of foresight technologies is not limited to collective discussions in real groups. The use of these technologies on virtual platforms, on the one hand, can reduce the impact of negative group effects, but on the other hand, can reduce the effectiveness of mutual learning in collective reflection skills. That is why, in our opinion, it is advisable to implement foresight technologies in both real and virtual communication spaces.

7. Conclusion

The methodology and disciplinary affiliation of the foresight continues to cause controversy among representatives of various areas of humanitarian knowledge. Superiority in this dispute is occupied by economists and political scientists, using highly specialized foresight methods for long-term strategic research (Salo, Gustafsson, & Ramanathan, 2003). The recognition by a number of authors of the interdisciplinary nature of the foresight and the technologies derived from it allowed considering foresight technologies as meta-technology (Kirpichnikov, 2009) and widely apply them in modern education. Their use along with other innovative technologies and models turned out to be productive both in Russian universities and abroad (Kuzminov, 2007).

There are undeniable advantages of the use of a foresight method in achieving a certain success in the educational process: generation and extended reproduction of interdisciplinary knowledge; active use of the intellectual potential of all participants of educational process at the stage of collecting and accumulating information; possibility to compare personal strategies for professional development of students, determine pedagogical objectives and their implementation in university educational environment (Ju et al., 2017).

The development of communicative reflection requires the use of special modern pedagogical technologies, among which foresight technologies occupy a leading place, which is substantiated by the essential characteristics and innovative content of the foresight, operational structure and composition of methods that contribute to the development of students' communicative reflection. The communicative and reflective potential of foresight technologies is determined by their reflective nature, as well as the value of open communicative strategies for building variable images of the future. The use of foresight technologies in the educational process will allow to expand the variability of thinking, communication and reflexive repertoires, to make the transition from a closed to an open variable future strategy.

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