

EDUCATIONAL FORECASTING AS A SCIENTIFIC AND PEDAGOGICAL PROBLEM

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ABSTRACT

The article is devoted to the forecasting problems in the field of education, the main goals, objectives and methods of pedagogical forecasting are considered, the necessity of adapting educational systems to changes in the social and technological fields is shown.

Keywords: Pedagogical forecasting, Delphi method, professional education, individual educational.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

The global trend of recent decades is the reform of education, while issues of a socio-economic nature come to the fore. The transformation initiative comes not so much from educational or scientific organizations, universities, as from government institutions and the business community. Reforms are controversial, in particular because socio-economic and sociocultural tasks, in fact the tasks of education and enlightenment, may not be identical. This gives rise to axiological dilemmas in the theory and practice of education: manipulation or upbringing, personal benefit or personal growth, subjectivity or objectivity of truth, pragmatism or spirituality in relationships - this is not a complete list of them.

In a post-industrial society, the compensatory role of humanitarian technologies is increasing, which are responsible for the subjective factor, which turns some possible future into reality. The concept of "humanitarian technology" is filled with such meanings as "respect for the individual", "value of life", "existence, human development", "quality of life". They are needed to transform society into an educated, enthusiastic society, where positive life strategies are created that lead to success. This influence creates a new space of life, where "person to person" [1]. What kind of education will we receive in the desired future? Are the ideas about an educated person and "human capital" identical? What is the concept of modern education? These questions are in the zone of understanding the conceptual pedagogical forecast, which forms educational models of the future, analyzes trends, trends, patterns of development of education, evaluates the influence of factors, creates varied scenarios for the development of an object. Prediction in education is accompanied by ongoing expertise. It should be noted that the humanitarian aspects of examination seem to us extremely important: it is in the expert accents that education priorities are manifested.

Nevertheless, the incentive for creating 21st century skills, creative and innovative thoughts, new ideas and concepts in education is increasingly served by the business requirements and economic demands for educational conditions and results. The technology of education is becoming more and more interactive, able to create alternatives, using an interdisciplinary approach, an over-subject context. Globalization of education leads to higher education standards aimed at economic prosperity, which allows to prepare a more competent specialist. Education standards can also be seen as a normative forecast. From this point of view, it is

important to understand the forecasting methodology, consider the necessary conditions, consider the possible time frame, modern technologies, get acquainted with the features of the interaction between the subject and the forecast object.

The predictive function is one of the main functions of science. Not only with the aim of describing, explaining, but mainly designing a model for solving a certain class of pedagogical problems (tasks), which significantly increase the efficiency of the functioning and development of the newly designed educational system, pedagogical theories are created. conditions of the object in the future and (or) about alternative ways and terms of their achievement. ”[2] Pedagogical forecasting is most often considered as a type of research activity based on extrapolation, modeling, expert estimates, etc. methods that are aimed at solving problems and problems in predicting the development of educational systems, the development of pedagogical theories, in predicting other pedagogical phenomena and processes.

A promising in modern conditions the theoretical direction is the conceptual pedagogical forecasting - “the science of the laws of the emergence, formation and development of pedagogical theories, as well as principles, methods and conditions conducive to the effectiveness of pedagogical forecasting in the development of relevant pedagogical theories” (V. I. Andreev [3]) The main tasks of conceptual pedagogical forecasting are to establish essential, basic laws, principles and conditions for the development of pedagogical concepts, based on which you can activate and intensify the process of developing new pedagogical theories.

In addition to the so-called research or search forecast, based on the knowledge of trends and patterns, on the accumulated experience of pedagogical science, designed to identify and formulate new opportunities and promising directions for the development of education, a program or normative forecast based on recognized social needs, trends and patterns of pedagogical development as well as data obtained by the research forecast. It is applied in nature: to formulate a program of possible ways, measures and conditions for achieving goals and solving the problems of the development of pedagogical objects, take into account the mutual influence of various factors, assess hypothetical terms and priorities for achieving various possible goals. The normative forecast describes the desired future. In modern forecasting practice, these two types of forecasts, as a rule, appear in unity. UNESCO considers forecasting as work on various scenarios of the future. “Therefore, it builds on the present, explores the emerging signs of future trends and considers modern solutions for their possible consequences” [4, p. 4].

In modern forecasting of dynamically developing educational systems, there are tendencies for reducing the terms of probable forecasts, as well as an increase in the number of likely scenarios. According to the forecast time in the social sphere, short-term forecasts (for 1-2 years), medium-term (for 5-10 years), long-term (15-20 years) are distinguished. The general typical forecasting technique contains the following main stages of the study [5]: prediction orientation (determination of the subject, purpose, tasks, lead time, working hypotheses, methods, structure and organization of the study); prognostic background (collection of ready-made data on related, non-core forecasting branches); initial or basic model, that is, a system of indicators, parameters that reflect the nature and structure of the object; search model (projection into the future of the system of indicators of the original model on the lead date according to the observed trend taking into account factors of the prognostic background); for controlled phenomena - the normative model (projection into the future of the system of

indicators of the original model in accordance with the set goals and norms for the given criteria]; assessment of the degree of reliability (verification) and refinement of preliminary models using by using parallel, control methods, usually a survey of experts; development of recommendations for optimizing decision-making in planning, management, etc. based on a comparison of prognostic models.

Among the principles of predictive research there may be such as the principle of the unity of historical and logical, the principle of systemicity, the principle of the unity of theory and practice. Foresight method, which is based on a system of methods for expert evaluation of long-term prospects of innovative development, identification of technological breakthroughs in any area of human activity, identification of tactical or strategic advantages of conceptually attractive ideas, plans, projects competing among themselves, in order to achieve the best effect, is usually called among the methods. as well as the extrapolation method (studying past and present stable trends in the development of the forecast object in the past, present and future), the method of analogies, matrix (morphological) analysis, the method of organized strategies, phenomenological, competitive, interpretative, synergetic, comparative methods, etc. we distinguish humanitarian expert methods in forecasting, among which heuristic methods: Delphi, generation of new ideas, empathy, heuristic issues. Let us consider in more detail some of them that are promising in the prognostics of teacher education. In the forecasting of pedagogical education, methods of extrapolating the development of the system are promising, taking into account the dynamic range of the development of the object and the factors of the prognostic background; modeling (simulation, network and other models); expert surveys; historical and comparative analogies; forecast scenarios; matrices of mutually influencing factors, for example, "problems are possible ways to solve them."

The "Delphic" method was developed in 1964 by specialists of the American company RAND Corporation G. Gordon and O. Helmer. It belongs to the group of methods of independent intellectual experiment. It is based on the identification of a coordinated assessment by an expert group after repeated anonymous interviews and communication to experts of the results of the previous round. In the first round, the most important problem is identified. In the second round, the task is to name the term of a certain event. Particularly discussed are opinions that differ from those of the majority. This allows experts to further substantiate their estimates. The modern Delphi methodology provides for consistent (from round to round) statistical processing of expert responses in order to determine the average statistical characteristics. In the third round, experts are given the opportunity to change their assessment towards rapprochement with the majority or to argue their personal thoughts. If the difference in the average estimates of the last two rounds does not exceed the established error, the expert survey is terminated.

The classical stage technique proposed by G. Kahn and tested on global forecasts in his book "Year 2000" [6] consists in identifying basic quantitative and qualitative development trends and tracking changes in society under their influence. Average indicators of trends form a "basic scenario", that is, a general line of development of events. Variations in indicators and dynamics of trends form additional or alternative scenarios. The peculiarity of the scenario method is that it allows you to clearly indicate the directions and options for the development of events, including the medium and long term (with correctly indicated and tracked trends), but poorly predicts dates and the exact format of events. Namely, this is usually considered a "forecast". A common mistake in the stage setting is the unjustified extrapolation of quantitative trends.

There are several well-developed stage methodologies. For example, instead of the base scenario, they operate on “alternative scenarios” formed by the hypertrophied development of a particular trend. The result of the scenarios are several “crooked mirrors” that display options for the future. Such scenarios are primarily thought-provoking material, not a predictive tool. Or, in business scenic techniques, they rely on simplified matrices from a small number of variables in trends - usually two, which gives a 2x2 scenario table and, therefore, four scenarios that form a basis that is quite sufficient for development tasks. RAND specialists operate their own conceptual apparatus of “rand-stage”, highlighting “drivers” (the main factors affecting the dynamics of the situation) and “uncertainties” (factors and events whose effects and consequences are not clear). A method of continuous stage design is being developed, based on the idea of the inevitable future. The inevitable future is determined by the laws of nature and society, as well as managerial decisions made in the past. It is the common core of all possible scenarios. An impossible future is a future incompatible with the inevitable. Any version of the future that does not cross the “border of the impossible” and includes the inevitable future is a scenario version, the number of which in this technique is infinite, although any possible scenario can be represented as a linear combination of several “limit” scenarios. For pedagogical forecasting, its variety is also relevant - semantic forecasting - unpacking of the meanings of the future through the analysis of literary texts of the past and present, or through the definition of semantic spectra of new concepts, or through the semantic analysis of control signals: documents, orders, statements of decision makers.

We also note a number of features of modern forecasting in the field of education, which should be taken into account. Forecasting is the management of the future, and the forecaster himself can set the social course by proposing a scenario hypothesis that may or may not be related to trends, trends, project lines, and forced options. This gives rise to the idea of predictive design - a technology that allows you to give the images of the future certain additional properties that are desirable for the subject of forecasting. The most important feature of any correct predictions of the future is not always the system itself that is predicted, but its metaphor.

The “foresight” methodology was originally developed not to predict the future, but rather as a means of coordinating the positions of decision makers. In fact, this technique is a kind of “round table”, the participants of which exchange their vision of development prospects in various fields. A free discussion format provides the opportunity to make a variety of assumptions and hypotheses, as well as discuss the possible consequences of certain events and reactions to them. As a result, participants get some general idea of the development prospects and actions in a given situation. In fact, foresight is more a political tool than a research technique.

Over time, the foresight technique was expanded to include scenario work, the use of data from various models, expert surveys, etc. Currently, the technique of such an “integrated foresight” is considered the most progressive and effective among others. It includes a detailed analysis of the situation and opinions, work with experts and decision makers, seminars, scenario development and active work to promote the results. We can say that foresight has ceased to be considered as a way of coordinating the vision of the future by experts and has become a way of coordinating requirements for the future on the part of decision makers.

When forecasting the development of teacher education, it is necessary to take into account the imperative of the meaning of new strategies in teaching teachers:

- learning strategies based on the development of scientific research and the inclusion of their results in professional activities;

- Integrated learning strategies (integrates vocational training (master classes] and personal development training);
- strategies for learning career planning (learning succession planning);
- cooperative learning strategies;
- communication learning strategies (communication learning);
- learning strategies in online communities;
- strategic trainings of vitalization actualization.

Note the most important forward-looking requirements of these developments:

- organization of support for the development and implementation of development programs for pedagogical universities, including those with signs of inefficiency based on the results of annual monitoring;

- the development of projects of the State Educational Standards of higher pedagogical education that meet the professional standards of teachers and the State Educational Standards of general education, providing the possibility of flexible and variable training paths for undergraduate programs (including academic and applied bachelor's programs, as well as five-year training in two subject areas), and master's programs providing training in broad a range of popular programs in the field of education, and graduate school;

- development of models of flexible multi-level and multi-channel training of teachers, including new forms of practice, such as pedagogical internships, mechanisms of network interaction of organizations of secondary, higher and additional professional education;

- development of models of qualification tests (certification) for candidates (including university graduates in areas of non-pedagogical education) for work in the field of general education, as well as for using the developed models for certification of teachers;

- Competitive support for the organization of regional school-university partnerships and other forms of network interaction between educational organizations that train teachers;

- development of modern requirements for programs of professional training, advanced training and retraining in pedagogical areas in accordance with the professional standard of the teacher;

- implementation of pilot innovative projects for the training of teachers in universities: the development of new models and programs, the development of requirements for teachers who are carriers of a new ideology and technology of teacher education;

- Competition of pilot sites for testing new models and technologies of teacher education. An increase in the funding standard for pilot sites implementing pedagogical internship programs;

- development and implementation of a program of grant and methodological support to the best graduates of leading universities who find jobs in municipal educational institutions;

- Carrying out on the basis of leading universities, academies of education, as well as leading international centers for teacher education, programs of additional professional education (internships, professional retraining and advanced training) of the teaching staff of universities that conduct training in pedagogical specialties;

- the opening of flexible network programs for individualized intensive training in pedagogical programs with mandatory practice in a general educational organization for students of non-pedagogical specialties and areas of training;

- Creation of normative opportunities for introducing additional entrance tests for entering higher educational institutions on pedagogical educational programs;

- development of recommendations for including in the basic part of teachers' salaries additional payments for a master's degree, to reduce the workload of a working teacher without reducing payment for the duration of studies at the master's and postgraduate courses;

- development and introduction of qualification requirements for the minimum level of teacher education: when working with young children no lower than a bachelor, while working

with students with special educational needs (psychologists, speech therapists, corrective teachers, etc.) no less than a master;

- improving teaching methods and technologies, increasing the volume of internships and internships, applying an activity approach, taking into account the real needs of the school. The development of practical competencies in all training programs based on the new professional standard, including through practice in partner schools. Strengthening the connection of all components of the training content with the practical professional tasks of the teacher;

- increasing the efficiency of mechanisms for attracting the most capable graduates to the position of teacher, creating a system of professional support for young teachers, creating career prospects for teachers, implementing a grant system for supporting teachers.

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