FORMATION OF ECO-FORESIGHT COMPETENCE IN FUTURE SPECIALISTS

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Abstract: *The following article is based on the need for a future modern specialist to be able to see technical and technological innovations that may occur in the future, to adapt to them and to be able to predict not only the development but also the problems that will arise, and the need to plan the solution of problems in advance. Information about foresight as one of the most modern technologies of ecological forecasting is given, the classification of foresight methods and ways of using them are described. The importance, purpose and role of future specialists during the professional activity of the eco-foresight competence is determined.*

Key words: *higher education, innovation, environmental forecasting, foresight, method, eco-foresight, competence.*

Introduction

It is one of the priority tasks of our country to establish a system of training highly qualified personnel in higher education who have high moral and ethical qualities, who think independently, who have deep theoretical knowledge and practical skills, who can make a worthy contribution to the stable development of economic sectors, and who can find their place in the labor market. One of the challenges in reforming the higher education system in line with the spirit of the times is that it needs to develop in a leading and forward-looking manner in an environment of innovative production. Until now, the traditional education system has relied more on previously acquired theoretical and practical knowledge, but now the time demands adaptation by predicting the future, that is, educational goals and tasks must be oriented to future development. It is necessary for the future modern specialist to be able to see the technical and technological innovations that may occur in the future, to adapt to them and to be able to predict not only the development, but also the problems that will arise, and to plan the solution of the problems in advance. According to the experts of the Club of Rome, education should be aimed at forming the skills of "literacy for the future" in young people [1]. This is formed on the basis of foresight education.

METHODS OF RESEARCH

The analysis of scientific and teaching-methodical literature, pedagogical observation, comparative analysis, generalization, pedagogical experiment-testing and foresight methods were used in the research process.

RESULTS AND DISCUSSION

The content of forsite education is aimed at learning and applying new technologies interdisciplinary and interdisciplinary. In order to take a proper place in the international education system, it is necessary to implement reforms based on the experiences of developed countries and ensure competitiveness. For this, promising projects, innovative programs and technological innovations are necessary. Today, many European countries use foresight technology as the main instrument of development. In foresight studies, representatives of all sectors, including public representatives, are involved in the expert group, and it is considered the main methodology for determining the future of innovative development. For this reason, foresight is also considered as a tool for managing future development. Therefore, the word "Foresight" (English: "Foresight") means "Looking into the future" [2].

Futurology actually deals with predicting the future. Futurology is the science of the future, based on interdisciplinary research, it consists in finding fundamental scientific answers to the problems of "how people will live and work in the future, that is, what will be the future of human history" and creating a future scenario. The main focus is to predict the future by studying the laws of development of the past and the present, that is, which techniques and technologies will develop today, what will change in the near future, what events may occur? - is to search for a solution to such questions.

Future ecology research based on foresight technology differs from traditional research in the following features:

1. Study of the main modifiable factors in current environmental events and processes, including the smallest environmental problems ("wild cards", "wildcards", "bifurcation point"

2. Creation of systematic and reasonable future scenarios based on conclusions of social, technological, economic, ecological and political sciences;

3. Creation and implementation of step-by-step future strategies, road maps, concepts based on theoretical conclusions and practical recommendations.

It should be noted that eco-foresight education is not a prediction of the future based on fantastic conclusions. The experience of experts shows that forecasting based on foresight is the most accurate prediction result [3].

The use of Forsite technology methods in the educational process is selected depending on the educational direction or field of specialization and the type of training.

The methods of using foresight in the educational process can be systematized based on several criteria [4]:

- by type of foresight: normative (creating a desired future scenario) or scientific research (creating a future scenario based on established development traditions);
- on the purpose of the foresight: development of ideas or analytical;
- according to the method of working with experts: direct communication, online communication, questionnaires and direct personal discussion);
- according to the level of traditionality and innovation.

Foresight methods used in the educational process are divided into types such as prediction (prediction of the future), analytical (analysis of the current situation) and creative (formulation of new ideas for the future) according to their function.

Certain methods of foresight can be used for various purposes, including predicting the future, analyzing and studying events and the environment, generating new ideas about the future, and formulating ideas about a set goal.

All methods of foresight can be divided into 3 large groups [52]:

1. Quality assessment methods: retrospective, brainstorming, civic panel, conference and workshops, essay (screenplay) writing, expert panel, forecasting, interview, literature review, morphological analysis, goal tree (logic diagram), role-playing, scenario, reverse scenario, science fiction, simulation games, verification, SWOT-analysis, weak signals (jokers).

2. Quantitative assessment methods: benchmarking, bibliometrics, indicators (time series analysis), modeling, patent analysis, tradition extrapolation (applying the results obtained based on the observation of one part of the thing and phenomenon to another part of it).

3. Blended methods: structural analysis, delphi, key forward-looking (critical) technologies, resource review, global trend analysis, numerical scenario creation, road map, stakeholder opinion analysis, interaction analysis, resource scanning, testing, future prediction, games, global trend analysis, modeling , simulation, multicriteria analysis, future box, etc.

When using the aforementioned foresight methods in the educational process, it is important to know for what purposes they are used. Therefore, foresight methods can be classified depending on the purpose of use as follows:

Forecasting (expertise) methods: Delphi method (Delphi), creation of scenarios (Scenarios), identification of critical technologies, extrapolation of traditions (Trend

Extrapolation), simulation modeling (Simulation Modeling), critical (key) technologies method (Critical/Key Technologies), historical analogues method and other specific empirical data-driven methods.

Analysis methods: SWOT, (Strengths, Weaknesses, Opportunities, Threats – analysis), STEEPV, interaction analysis (Sross-impact – Analysis), environmental scanning (Environmental Scanning), expert panel, preparation of essays, relevance tree method (Relevance Trees), balanced scorecard

Ideas formation (creative) methods: expert discussion, focus group, brainstorming, conferences, essay preparation, morphological analysis, expert panels, wild card, technology roadmapping, relevance tree method (Relevance Trees).

It should be noted that this classification is conditional, because some methods can be used both in forecasting and in analysis.

In general, with the help of foresight methods, it is envisaged to involve various professions in the creation of the "Desired Future" scenario. Peter Bishop's guide "Strategic Foresight Recommendations" shows that the foresight methodology can consist of 5 steps [5]:

- formulation of the problem or description of the content of the foresight research field;
- study of current conditions in the researched field;
- analysis of current situations;
- to determine the development of current technologies on the studied problem and create future scenarios within the framework of the expected consequences;
- develop recommendations for each scenario with the participation of all stakeholders.

In foresight projects of developed countries and in the process of formation of foresight competence in future specialists, methods such as Delphi, expert panel, brainstorming, creating scenarios are widely used.

CONCLUSIONS AND FUTURE SCOPE

To sum up, it can be noted that the use of foresight technology in the educational process or the inclusion of foresight-related subjects in the block of elective subjects of training plans in the training of future specialists will enable the formation of eco-foresight competence in future specialists. This, in turn, leads to the formation of skills of future specialists in the development of strategic plans aimed at preventing environmental pollution as a result of the release of harmful substances into the atmosphere during the technological processes of enterprises or companies. Formation of eco-foresight competence in future specialists and development based on the principle of "Lifelong learning" during professional activity, development of abilities

to develop clean ecological products, predict the consequences of environmental pollution, create scenarios of a clean ecological environment based on the results of predictions, develop long-term strategic plans will be the basis for

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