MODELING THE APPLICATION OF EDUCATIONAL TECHNOLOGIES IN THE CONDITIONS OF POSTGRADUATE EDUCATION IN UKRAINE

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ABSTRACT

The article discusses methodological approaches that open up new opportunities and prospects for the development of the theory of design of educational technologies, applied research in the field of postgraduate education. The study points to the practical significance of the study, which has a practice-oriented nature and experimentally proves that the developed concept and technology of adaptive design of educational technologies in the conditions of postgraduate education of the university are the basis for the formation of highly competent specialists with competitive advantages in the labour market. The article proposes solutions that ensure the effectiveness of the system of continuing professional education through the use of methodological approaches that determine the adaptability of the design process and implementation of educational technologies, and create the basis for the career prospects of university graduates in the new socio-economic conditions.

Keywords: Postgraduate Education, Qualities, Additional Training, Professional Education, Technologization

INTRODUCTION

The article discusses the design of educational technology as a pedagogical problem; methodological approaches are substantiated, the use of which will allow adapting the design and implementation of educational technologies to the specific conditions of the PGE of the university.

Pedagogical design, which has absorbed many fruitful ideas of technical design, allows you to optimize the teacher's activities, and its result is an information model or a didactic project of interaction between a teacher and students, conditioned by a certain pedagogical concept. Research is devoted to the problem of designing educational technologies (Vikhanskiy, 2006; Zimnija, 2004; Hutmacher, 2007; Lednev, 2002; Iasechko, 2019a; Windeatt, 2011; Campbell, 2007).

Analysis of the pedagogical literature on this issue made it possible to single out a generalized algorithm for designing teaching technologies in an engineering university, which implies the following procedures: based on the analysis of an order for a specialist, a model of professional activity is built (moreover, the analysis is carried out jointly with representatives of the customer - production). Further, a model of professional training is built; its priority goal is

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revealed as an expected result (Braze, 2003; Piskunov, 2001; Iasechko, 2019b; Vikhanskiy, 2006).

On this basis, an educational technology is being designed, aimed at forming the professional competence of a university graduate. Correction is possible both according to the results of control at the university, and according to the quality assessment of the specialist by the customer.

However, the proposed approach does not take into account the specifics of the PGE as a component of the system of continuing professional education, which contributes to the formation of the professional competence of the future engineer and has such distinctive qualities as flexibility, versatility, multilevel, mobility, and openness.

MATERIALS AND METHODS

The process of designing and implementing educational technologies in a PGE environment should be adaptive, allowing a quick response to any changes, both internal and external, while maintaining the integrity and efficiency of the technology, the compliance of the result with the requirements of consumers and the labour market. The mechanism of adaptation to specific conditions of the PGE manifests itself at several interrelated levels: educational technology - educational process - educational program - educational service.

The adaptability of educational services involves the integration of all elements of educational activities, adapted to the requirements of the labour market, and, as a result, an increase in the efficiency and competitiveness of the university in the educational services market.

The methodological basis for adaptive design and implementation of educational technologies in the specific conditions of the PGE of an engineering university is the following approaches:

- systemic, defining PGE as a component of the pedagogical system of an engineering university, which has continuity and relationship with the main engineering education; taking into account its specifics and used to structure the design process and implementation of educational technologies;
- Competence-based, aimed at increasing the efficiency of the formation and development of professional competencies of future engineers to the level of core, distinctive for a particular person. In the conditions of PGE, it becomes the leading one, since the goals, content, ways of mastering additional educational programs are determined by the professional component and the set of competencies required from specialists;
- integrative, allowing at the level of the target component to agree on the achievement of various goals within the framework of an interconnected educational process in the conditions of basic and additional education; at the level of content and procedural components, synthesize interdisciplinary knowledge, skills, and abilities necessary for a future engineer in his professional activities;
- personal and activity-oriented, focused on a holistic view of the professional activity of an engineer, its functions and professional tasks to be solved, attitudes and methods of activity; taking into account the needs of the personality of the future engineer, which go beyond the main educational program.

Strategic planning and management approaches occupy a special place in the methodological basis of adaptive design and implementation of educational technologies in the conditions of a PGE engineering university. As a rule, educational technology is implemented over a long period of time, with a changing internal and external environment, which makes constant adjustments inevitable. In order for changes to be made on time and not to violate the essence of the technology, it is necessary to foresee them in advance, during the design process.

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If we consider educational technology from these positions, then it is a combination of planned actions and forced reactions to ongoing changes (Astashova, 2002).

The strategic management process is a tool for making managerial decisions and includes four main types of management activities: resource allocation, adaptation to the external environment, internal coordination and organizational strategic foresight. Strategic planning alone does not guarantee success due to mistakes in organization, motivation and control. However, formal planning can create a favorable basis for achieving educational goals (Braze, 2003; Piskunov, 2001; Iasechko, 2019b; Vikhanskiy, 2006).

Transferring this methodology to the strategic planning process in a PGE environment, the following stages can be distinguished:

Defining a mission and forming a strategic vision for the development of the PGE organization;

The formulation of target settings of the educational process with the definition of long-term, medium-term and short-term goals;

Analysis of the external environment; analysis of the internal environment of the PGE organization in terms of the possibility of implementing educational programs;

Development of strategic alternatives to educational activities;

Selection and implementation of educational strategy; assessing performance, exploring new trends and taking corrective action.

The article considers new concepts for the sphere of continuing professional education:

- Educational strategy - a system of long-term, determined by the goal of development, conceptual attitudes (guidelines) for making decisions that allow allocating resources between alternative trajectories of development and adjusting their distribution when the external and internal conditions of the functioning of an educational organization change.
- Educational potential of an organization - a measure of its readiness to perform tasks that ensure the achievement of the set educational goal, the implementation of an educational project. Through the development of educational potential, the development of the organization and its divisions takes place. The development of an educational organization is viewed as an action on changes in the external environment and therefore has a strategic character. The choice and implementation of an educational strategy depends on the state of the educational potential, and therefore its assessment is a necessary current operation in planning.
- Educational climate of an organization - the state of its external environment, promoting or opposing the achievement of the educational goal. It manifests itself through the influence on the educational potential.
- The strategic educational position of an educational organization is determined by joint consideration of the internal and external environment, that is, educational potential and educational climate. Assessment of educational position can be done using various matrices, for example, a SWOT analysis matrix.

In modern conditions, when there is a rapid change in the educational climate or the educational potential of the organization, it is possible to adjust or significantly change the educational goals facing the organization and, as a result, change the educational strategy, educational technologies and proposed educational programs.

The process of achieving educational goals is of a changeable cyclical nature, and therefore, in order to obtain the necessary results, the main property of the educational system should be flexibility and the possibility of its readjustment. The PGE system possesses such qualities that it allows it to flexibly respond to changes in the education market and promptly

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offer new educational products and services based on specially designed educational technologies.

CONCLUSION

The article establishes that educational technologies are the basis of the educational process in the conditions of the PGE of an engineering university. The theory and practice of the design and implementation of educational technologies in the PGE environment, based on traditional approaches and not taking into account the specifics of PGE, are in contradiction with modern trends in the development of higher vocational schools - the technologization of education and the growing importance of PGE as a component of the system of continuing professional education.

The process of designing and implementing educational technologies in a PGE environment should be adaptive, allowing a quick response to any changes, both internal and external, while maintaining the integrity and efficiency of the technology, the compliance of the result with the requirements of consumers and the labor market. The condition for resolving this contradiction is the development of conceptual foundations and technology for the design and implementation of educational technologies that allow adapting these processes to the specific conditions of the PGE of an engineering university.

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