AXIOLOGICAL POTENTIAL DEVELOPMENT MODEL AND ITS IMPLEMENTATION IN DIGITAL EDUCATIONAL ENVIRONMENT OF A TECHNICAL UNIVERSITY

MODELO DE DESARROLLO DE POTENCIAL AXIOLOGICO Y SU IMPLEMENTACION EN EL ENTORNO EDUCATIVO DIGITAL DE UNA UNIVERSIDAD TÉCNICA

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ABSTRACT

Nowadays, it seems necessary to study the axiological potential of students in the digital educational environment of a technical university. This study, conducted on the basis of the experimental sites of the Federal State Budgetary Educational Institution of Higher Education, offers the model for the axiological potential development among students and its implementation in the digital educational environment of a technical university. The axiological potential of technical university students is manifested in the value attitude to educational and research activities, awareness of needs and opportunities, in the development of abilities to the level of productive activity, in the implementation of abilities and self-fulfillment. The article analyzes the model for student axiological potential development in the digital educational environment of a technical university, pays attention to methodological approaches, a set of pedagogical conditions for development and the structural-level content of axiological potential components among the students of a technical university.

Keywords: axiological potential; development model; technical university student; digital educational environment.

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RESUMEN

En la actualidad, parece necesario estudiar el potencial axiológico de los estudiantes en el entorno educativo digital de una universidad técnica. Este estudio, realizado a partir de los sitios experimentales de la Institución Educativa de Educación Superior Presupuestaria del Estado Federal, ofrece el modelo para el desarrollo potencial axiológico de los estudiantes y su implementación en el entorno educativo digital de una universidad técnica. El potencial axiológico de los estudiantes universitarios técnicos se manifiesta en la actitud valorativa hacia las actividades docentes e investigativas, la conciencia de las necesidades y oportunidades, en el desarrollo de habilidades al nivel de la actividad productiva, en la puesta en práctica de las habilidades y la autorrealización. El artículo analiza el modelo de desarrollo del potencial axiológico estudiantil en el entorno educativo digital de una universidad técnica, presta atención a los enfoques metodológicos, un conjunto de condiciones pedagógicas para el desarrollo y el contenido a nivel estructural de los componentes del potencial axiológico entre los estudiantes de una universidad técnica.

Palabras clave: potencial axiológico; modelo de desarrollo; estudiante universitario técnico; entorno educativo digital.

INTRODUCTION

Modern education in the world community is the leading factor determining the state of development of all spheres of life. In terms of globalization and informatization, the issues of the value-semantic sphere development among future professionals, and the graduates of technical universities become relevant (Gulyaeva & Semikina, 2020). The study of the problem of the axiological potential development among students in the digital educational environment of a technical university is conditioned by the need to resolve the existing contradictions: between the need of modern society for university graduates ready for professional activity and existing approaches to teaching in higher education using distance and digital technologies; between the need of society for the graduates of technical universities focused on self-fulfillment in professional activities and insufficient theoretical and methodological elaboration of this problem in terms of higher technical education (Ereshchenko et al., 2019; Klochko et al., 2020).

The authors see the resolution of the identified contradictions in a model creation for the development of the axiological potential among students and its implementation in the digital educational environment of a technical university. This study reveals the features of experimental work organization related to the axiological potential development among students.

Hypothesis

The proposed author's model for the development of students' axiological potential contains personal and activity levels, can be located in time and space, and is an algorithm for student actions in professional activities. The personal and activity levels of the model are represented by the components whose criteria allow to diagnose the level of axiological potential development among students in the digital educational environment of a technical university. The development of the axiological potential among students is carried out in the learning process during the implementation of a set of

pedagogical conditions. The digital educational environment of a technical university is one of the pedagogical conditions for the axiological potential development among students in online and mixed learning.

METHODS

This study is analytical and solves the following tasks: to clarify the concepts of "axiological potential", "axiological potential of technical university students", "digital educational environment of a technical university"; describe the model for the axiological potential development among students in the digital educational environment of a technical university, identify methodological approaches and principles for the development of the axiological potential among students in the digital educational environment of a technical university, reveal the component-level structure of the axiological potential and the features of the model implementation for the development of the axiological potential among students.

To solve the tasks set, theoretical and empirical methods were used: the analysis of scientific literature, synthesis, generalization, modeling; the study of scientific literature, documents and results of activities, and generalization of research results. Based on the results of the study, they developed technology for the axiological potential development among students in the digital educational environment of a technical university, tested on an array of students of the FSBEI HE “Magnitogorsk State Technical University named after G. I. Nosov” and its branch in Beloretsk. The main conclusions and results of the study, conducted since 2005 to the present, are reflected in monographs, educational and teaching aids, the publications of leading pedagogical journals, scientific articles, in speeches at international, all-Russian, regional, scientific and scientific-practical conferences (Magnitogorsk, Moscow, Ufa, Yalta, St. Petersburg, Orenburg).

RESULTS AND DISCUSSION

Axiological potential is a kind of human potential that reveals its values that are the basis of needs through the implementation of abilities. Axiological potential is an internal formation of a subject, which can be at rest until favorable circumstances arise for its implementation (Ereshchenko et al., 2019; Razinkina et al., 2019).

The axiological potential of students of a technical university is manifested in the value attitude to educational and research activities, awareness of needs and opportunities, the development of abilities to the level of productive activity, implementation of abilities and self-fulfillment (Kubrushko et al., 2020).

Structurally, axiological potential is a systemic formation of components: motivational, cognitive, and reflexive-activity (Grishaeva et al., 2021).

A value attitude to professional activity ensures the sustainability of axiological potential development, its professional ori.

entation, the development and implementation of abilities in professional activity, and the self-fulfillment of a subject (Klochko et al., 2020; Vladimirovich et al., 2021).

The axiological potential of technical university students has a level nature and manifests itself in the unity of personality characteristics and activities (Ovcharuk et al., 2021). The manifestation of axiological potential is carried out in activity. The highest level of its manifestation is the self-fulfillment of a subject and his productive activity.

During the study, it became necessary to develop a model, clarify the principles and pedagogical conditions for its successful functioning in order to develop effectively the axiological potential of students in the digital educational environment of a technical university.

The methodological basis of the study is the provisions of the axiological, activity, polysubject and resource approaches.

Axiological approach (Ilinskaya, 2020; Tolnaiová, 2020) is conditioned by the study of the axiological potential development among students, its actualization in creative activity, the familiarization of a technical university student with the world of professional culture, the formation of a value attitude to professional activity.

Activity approach ensures the inclusion of a student in educational, research, project activities during axiological potential development (Shipunova et al., 2019; Aladyshkin et al., 2020). The result of a student's activity is the development of his personal characteristics as a subject of activity and communication.

The polysubjective approach creates the dialogic communication in the process of joint activities of a teacher and students, a favorable psychological climate for interaction (Ereshchenko et al., 2019; Salakhova et al., 2021).

Resource approach (Bulankina et al., 2019; Gulyaeva & Semikina, 2020; Sazonova et al., 2022) focuses on resources and competencies, allows to organize the activities of students in the digital educational environment of a technical university, apply a competency-based approach in practice, planning, designing, and developing the axiological potential of students, in creating pedagogical conditions and applying means, methods and forms, taking into account the resources of the digital educational environment of a technical university.

The model for the axiological potential development among students in the digital educational environment of a technical university is represented by the following interrelated blocks: normative-target (social order, goal, regulations), methodological (methodological approaches and principles underlying this process), content (the components of the axiological potential of technical university students and the functions they perform, the work programs of disciplines), organizational (stages and a set of pedagogical conditions), technological (methods, forms, means), evaluative and resulting (structural components, criteria, indicators) (table 1).

Table 1. Axiological potential development model among students

NORMATIVE-TARGET BLOCK		
SOCIAL ORDER: TRAINING OF GRADUATES OF A TECHNICAL UNIVERSITY WITH A HIGH LEVEL OF AXIOLOGICAL POTENTIAL DEVELOPMENT	Purpose: development of the student axiological potential in the digital educational environment of a technical university	Regulatory documents: Federal Law No. 273-FL (December 29, 2012) "On Education in the Russian Federation", Federal State Educational Standards of Higher Education, curricula, the work programs of disciplines
METHODOLOGICAL BLOCK		
APPROACHES:	Principles:	
AXIOLOGICAL, ACTIVITY, POLYSUBJECTIVE, RESOURCE	cultural conformity and cultural creativity, developing education, interaction between subjects, meaningful activity and uniqueness of result	
CONTENT BLOCK		
AP COMPONENTS	Functions	Content
MOTIVATIONAL	stimulation	It is revealed in the work programs of the disciplines "Team building and self-development technology", "Personal and professional self-development", "Social partnership", "Promotion of scientific products", and "Project activity"
COGNITIVE	cognitive, worldview, cultural creative, meaning formation	
REFLEXIVE ACTIVITY	socialization, development, upbringing, educational	
ORGANIZATIONAL BLOCK		
STAGES: PREPARATORY, BASIC, FINAL		
SET OF PEDAGOGICAL CONDITIONS		
VALUE ORIENTATION PROVISION FOR TECHNICAL UNIVERSITY STUDENT TEACHING	inclusion of students in professional value activities	organization of professional value content of the digital educational environment of a technical university
TECHNOLOGICAL BLOCK		
Methods	**Means**	**Forms**
DIALOGUE, EXERCISE, CASE METHOD, MODELING, PROJECT METHOD, DESIGN, THE METHOD OF CONTRADICTION IDENTIFICATION AND RESOLUTION, DECISION-MAKING METHOD, ESSAY, INTERACTIVE METHODS, TRAINING, BUSINESS GAMES, RESEARCH METHODS, SITUATION ANALYSIS METHOD, REFLEXIVE METHODS, SCENARIO METHOD, EXPERT RATING METHOD	diagnostic (tests, individual and group tasks, author's methods), information (educational portal, electronic educational resources, video conferences, audio files, Internet resources, professional databases, information reference systems, electronic libraries, online courses), materials (computers, software, office equipment, the Internet, a room for lectures and practical classes, trainings, a board, a multimedia projector, a screen, a Jungian sandbox, a workbook)	online, offline, mixed; lectures, lecture-conversation, lecture-visualization, practical exercises, consultations, independent work, group work, individual work, olympiads, conferences, scientific article, report theses, abstract, presentation
EVALUATIVE AND RESULTING BLOCK		
Structural components	**Criteria**	**Indicators**

NORMATIVE-TARGET BLOCK		
MOTIVATIONAL	needs	knowledge, communication and belonging to a social and professional community, creation, self-fulfillment
	values	cognition, development, self-fulfillment, communication, cooperation, professional area, creativity and co-creation, autonomy and partnership
	value attitude to professional activity	professional identity, moral consciousness, emotional and volitional stability, creative attitude to professional activity
COGNITIVE	cognitive skills, communication skills, special skills, creative skills	emotional intellect, intellectual lability, creativity, the ability to learn
REFLEXIVE ACTIVITY	cognitive skills, communication skills, special skills, creative skills	orientation in time, the ability to contact, emotional stability, empathy, tolerance, frustration tolerance, optimism, courage, self-relationship, self-esteem, self-regulation, self-organization and involvement in activities: educational, research, design.
AP DEVELOPMENT LEVELS AMONG STUDENTS	Personal level	Activity level
LOW	Low	Low
AVERAGE	Average	Average
ABOVE AVERAGE	Above average	Above average
HIGH	High	High
DEVELOPMENT RESULT		
the transition of technical university students to a higher level of axiological potential development		

The normative-target block performs the following functions: backbone, prognostic, and motivational. This block directs to the search for theoretical and methodological foundations and the means for the student axiological potential development.

The methodological block includes scientific approaches, the principles of student axiological potential development in the digital educational environment of a technical university, and performs the methodological function.

The content block is represented by the components of the student axiological potential at a technical university, includes the description of functions, the work programs of disciplines and performs informational, and orientational functions.

The organizational block is represented by stages (preparatory, main, final) and a set of pedagogical conditions for the student axiological potential development in the digital educational environment of a technical university: 1) ensuring the value orientation of teaching for technical university students; 2) the inclusion of students in professional value activities; 3) organization of the professional value content of the digital educational environment in a technical university.

The need to implement the first pedagogical condition is conditioned by the organization of student

teaching process on the principles of personality-oriented learning (humanistic, personal, culturally-oriented, culturally-activity-oriented, activity-oriented, value-based), the development of an attitude to professional activity as a socially and personally significant need and factor that creates opportunities for personal growth, spiritual and material potential, using the forms and methods of developmental education that contribute to the axiological potential development among the students of a technical university.

The identification of the second pedagogical condition is associated with the introduction of students to the system of professional values, revealing the diversity and richness of professional culture, the development of a value attitude towards it, with the professional value orientation of information, with the joint creative activity of a teacher and technical university students.

The third pedagogical condition provides professional and social value communication that contributes to the development of the axiological potential among technical university students, the actualization of the values, needs and abilities of students in the learning process, maintaining the parameters of the information and educational environment.

The evaluative-resulting block includes the development levels of the student axiological potential in a technical university and the result of the developed model implementation with the goal. Given the structure and specifics of the axiological potential of students of a technical university, it is possible to single out quantitative and qualitative indicators that characterize low, medium, above average and high levels of axiological potential development. This block performs information-analytical, evaluation-corrective and prognostic functions.

The developed model for the axiological potential development among students in the digital educational ambiance is structural and functional, each structural block performs specific functions.

According to the model, the axiological potential is an internal dynamic formation that combines the student personal and activity characteristics which are manifested in the learning process.

The digital educational environment (DEE) of a technical university is represented by the regulatory framework of higher education, the educational portal of a technical university with the personal space of participants (teachers and students), disciplines and courses, a system of accounting for a contingent of students, electronic journals, a system for statistical report collection, cloud storage and the means of information processing, as well as the access to electronic libraries, online courses on various platforms of universities in our country.

The digital educational environment of a technical university in our study is a type of information and educational environment of a technical university. DEE provides an information and educational environment for the development of the axiological potential of students with digital technologies, digital resources and allows you to regulate the educational process by digital traces. DEE performs the following functions: development, organizational, methodological, backbone, managerial, informational, personification, modeling, design, cultural and creative, individualization of learning, subject-forming, research and technological, and integration. These functions are resource characteristics that contribute to the development of the axiological potential among students (Ilinskaya, 2020; Salakhova et al., 2021).

After the experimental work carried out on the basis of the FSBEI HE "Magnitogorsk State Technical University named after G. I. Nosov" and its branch in Beloretsk during 2005 - 2009, 2019 - 2022, theoretical and methodological approaches have been identified, the model for the axiological potential development among students has been developed and tested and implemented in the digital educational environment of a technical university, the results have been analyzed. They established the principles and conditions for the optimal and effective development of the axiological potential of students in the digital educational environment.

The implementation of a set of pedagogical conditions to develop the axiological potential of students in the digital educational environment of a technical university is carried out in the process of learning within the educational, research and project activities of students studying the disciplines "Personal and professional self-development", "Team building and self-development technology", "Social partnership", "Promotion of scientific products", and "Project activity". The developed and theoretically substantiated set of pedagogical conditions for the student axiological potential development in the digital educational ambiance was tested on an array of students during bachelor engineer training.

CONCLUSION

In the study, they clarified the concepts of "axiological potential", "axiological potential of technical university students", "digital educational environment of a technical university". The author's model of students' axiological potential is described. The methodological approaches and principles for the student axiological potential development and the component-level structure of the axiological potential are determined. They revealed the features of the model implementation for the student axiological potential development in the digital educational environment of a technical university. The study was conducted on the basis of the experimental sites of the FSBEI HE “Magnitogorsk State Technical University named after G.I. Nosov” and its branch in Beloretsk.

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