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TRANSFORMATION AS UNDERSTANDING THE CAUSE-AND-EFFECT RELATIONSHIPS OF RESEARCH ACTIVITY AND APPLYING THEM IN ACCORDANCE WITH SET GOALS AND OBJECTIVES

Abstract. In the context of global transformational processes occurring in the world educational space, the interdependence between societal development and education is becoming increasingly evident. The aim of this research was to analyze the profound changes in the subject of academic and research activities and their impact on pedagogical culture. The study examined factors contributing to the transformation of the subject, including societal demands, the development level of the educational system, pedagogical theory and technology, as well as individual characteristics. Special attention was given to mentoring practice as a condition for effectively forming the generativity of subjects, which contributes to their motivation and retention in the profession. The research was based on an analysis of international experiences in modernization and reform of educational practice, identifying stress conditions caused by rapid changes and contradictions between current educational demands and understanding the dynamics of the future. The research hypothesis arised from the contradiction between existing education theories and the scientific concept of “personal transformation”. The modernization of education and the shift in focus from meeting needs to human development have led to the formation of a new approach to self-expression and the realization of personal potential.

The research employed a pedagogical experiment with the aim of determining and comparatively analyzing the impact of specific factors and conditions on the process of understanding causal relationships in professional and research activities and applying them according to established goals and objectives. The experiment involved 52 master's and doctoral students. The research method used was a frontal written survey, aimed at obtaining data on the respondents' readiness for pedagogical and research activities, as well as their ability to overcome difficulties and apply cause-and-effect relationships in their professional work.The experiment allowed for the measurement of parameters and outcomes related to the individual's awareness of their abilities and potential. In conclusion, the study demonstrates the necessity of adapting

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educational standards to contemporary realities and gaining a deeper understanding of causal relationships in the process of transformation.

Keywords: transformation, thinking, causal relationships, research, educational-cognitive process, method, comparative analysis.

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Трансформация: зерттеу қызметінің себеп-салдарлық байланыстарын түсіну және оларды қойылған мақсаттар мен міндеттерге сәйкес қолдана білу

Аңдатпа. Әлемдік білім беру кеңістігінде болып жатқан жаһандық трансформациялық процестер жағдайында қоғамдық даму мен білім берудің өзара тәуелділігі барған сайын айқын бола түсуде. Бұл зерттеудің мақсаты оқу-зерттеу қызметі субъектісіндегі терең өзгерістерді және олардың педагогикалық мәдениетке әсерін талдау болып табылады. Берілген зерттеу жұмысы субъектінің өзгеруіне ықпал ететін факторларды, соның ішінде қоғамның сұраныстарын, білім беру жүйесінің даму деңгейін, педагогикалық теория мен технологияны және жеке ерекшеліктерді қарастырады. Тәлімгерлік практикаға субъектілердің генеративтілігін тиімді қалыптастыру шарты ретінде ерекше назар аударылады, бұл олардың мотивациясына және кәсіби дағдыларын шыңдауға ықпал етеді. Зерттеу білім берудің өзекті талаптары мен болашақ динамикасын түсіну арасындағы жылдам өзгерістер мен қайшылықтардан туындаған стресстік жағдайларды анықтай отырып, білім беру практикасын жаңғырту мен реформалаудың шетелдік тәжірибесін талдауға негізделген. Зерттеу гипотезасы білім берудің қолданыстағы теориялары мен «тұлғаның өзгеруі» ғылыми тұжырымдамасы арасындағы қайшылықтан туындайды. Білім беруді модернизациялау және қажеттіліктерді қанағаттандырудың орнына адамның дамуына баса назар аудару өзін-өзі көрсетуге және жеке тұлғаның әлеуетін ашуға жаңа көзқарасты қалыптастыруға ықпал етті.

Зерттеу әдісі ретінде педагогикалық эксперимент қолданылды, аталмыш педагогикалық эксперименттің мақсаты кәсіби және зерттеу қызметіндегі себеп-салдарлық байланыстарды түсіну процесіне нақты факторлар мен жағдайлардың әсерін анықтау, салыстырмалы түрде талдау және оларды белгіленген мақсаттар мен міндеттерге сәйкес қолдану болып табылады. Экспериментке 52 магистрант пен докторант қатысты. Зерттеу әдісі ретінде фронтальды жазбаша сауалнаманы қолданылды, оның мақсаты респонденттердің педагогикалық және ғылыми-зерттеу жұмыстарына дайындығы, сондай-ақ қиындықтарды жеңу және олардың кәсіби қызметінде себеп-салдарлық байланыстарды қолдану қабілеті туралы мәліметтерді жинақтау болды. Эксперимент адамның өзінің қабілеттері мен мүмкіндіктерін түсіну процесінің параметрлері мен нәтижелерін өлшеуге мүмкіндік берді. Қорытындылай келе, зерттеу білім беру стандарттарын заманауи шындыққа бейімдеу және трансформация процесінде себеп-салдарлық байланыстарды тереңірек түсіну қажеттілігін көрсетеді.

Кілт сөздер: трансформация, ойлау, себеп-салдарлық байланыстар, зерттеу, оқу-танымдық процесс, әдіс, салыстырмалы талдау.

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Трансформация как осознание причинно-следственных связей исследовательской деятельности и умение их применять в соответствии с поставленными целями и задачами

Аннотация. В условиях глобальных трансформационных процессов, происходящих в мировом образовательном пространстве, все более очевидной становится взаимозависимость общественного развития и образования. Цель данного исследования заключается в анализе глубинных изменений в субъекте учебно-исследовательской деятельности и их влиянии на педагогическую культуру. В исследовании рассматриваются факторы, способствующие трансформации субъекта, включая запросы общества, уровень развития системы образования, педагогическую теорию и технологию, а также индивидуальные особенности. Особое внимание уделяется наставнической практике как условию эффективного формирования генеративности субъектов, способствующей их мотивации и удержанию в профессии. Исследование основывается на анализе зарубежного опыта модернизации и реформирования образовательной практики, выявляя стрессовые состояния, вызванные быстрыми изменениями и противоречиями между актуальными требованиями образования и пониманием динамики будущего. Гипотеза исследования вытекает из противоречия между существующими теориями образования и научным понятием «трансформация личности». Модернизация образования и смещение акцентов на человеческое развитие вместо удовлетворения потребностей способствовали формированию нового подхода к самовыражению и раскрытию потенциала личности.

В качестве метода исследования использовался педагогический эксперимент, целью которого было определить и сравнительно проанализировать влияние конкретных факторов и условий на процесс осознания причинно-следственных связей в профессиональной и исследовательской деятельности и их применение в соответствии с установленными целями и задачами. В эксперименте участвовали 52 магистранта и докторанта. Методом исследования был использован фронтальный письменный опрос, целью которого было получение данных о готовности респондентов к педагогической и исследовательской деятельности, а также о способности преодолевать трудности и применять причинно-следственные связи в своей профессиональной деятельности. Эксперимент позволил измерить параметры и результаты процесса осознания индивидуумом своих способностей и возможностей. В заключение, исследование демонстрирует необходимость адаптации образовательных стандартов к современным реалиям и более глубокого понимания причинно-следственных связей в процессе трансформации.

Ключевые слова: трансформация, мышление, причинно-следственные связи, исследование, учебно-познавательный процесс, метод, сравнительный анализ.

Introduction

The dynamism of modern societal development necessitates the continuous improvement of the education system, along with a creative and research-oriented approach to achieving its goals

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and objectives. Pedagogical education serves as a trigger in this process. These objectives are multifaceted, complex, and defined by specific historical conditions shaping the education system and the challenges of personality development, which encompass the context of cultural history and the history of forms of activity in human interactions, among other aspects.

Both foreign and Russian scholars have frequently analyzed the transformation of educational institutions, including higher education, and assessed the role of education in contemporary society [1]. The research by M. Gibbons presents institutional innovations emerging from the formation of the information society [2]. After reviewing this experience, the authors of this article concluded that it is necessary, firstly, to identify the main elements of the higher education system from the perspective of organizational theory, and secondly, to demonstrate the differences between these elements across various countries and the consequences they entail. Identifying these elements involves creating general categories that represent the most abstract concepts reflecting the properties and relationships of society and thought.

Transformation priorities numbers and the skewed representation of demographic groups within universities. On the other hand, transformation is viewed as an issue related to privilege and power [3].

We consider categories such as «personal transformation», «awareness», «thinking», and «trigger» filling them with empirical content based on the description of the research topic «Transformation as Awareness of Causal Relationships in Research Activities and the Ability to Apply Them in Accordance with Set Goals and Objectives». The essence of the identified relevant pedagogical and psychological phenomena, and the facts present in society that influence the development of education and research, provide grounds to assume that in the near future, the global educational community will face many new, previously unknown but acute problems. The role of knowledge and creativity, essential for solving these problems, will increase immeasurably.

To determine what is most important, it is necessary to consistently consider the similarities and differences in the structures and procedures of higher education in various countries. To group descriptive facts without simply listing them, an ordering structure is required. Comparing different countries is especially useful for revealing unique features and unconscious assumptions that dominate the subjects.

The emerging new societal values should positively contribute to the formation of individuals possessing competencies (the ability to actively and knowledgeably perform professional, civic, and other social duties) based on the knowledge and experience acquired through training [4]. These competencies should be oriented towards independent participation in the scientific and cognitive process and aimed at successful involvement in pedagogical and research activities. Consequently, those countries and peoples that can ensure a higher level of education, upbringing, and mastery in all its manifestations, and the capacity for scientific inquiry, will take center stage in the historical arena [5].

However, pedagogical science, whose object lies in the socio-humanitarian sphere, has its specific characteristics. As a branch of specific activity, it is related to studying and understanding real phenomena in education, research, and human learning. Although the process of obtaining pedagogical knowledge in research follows general laws of scientific cognition and requires the implementation of precise, rigorous research methods, the nature and results of pedagogical research are significantly influenced by the value-based practical consciousness existing in society [6].

The specificity of training teacher-researchers imposes at least two requirements on the nature of their intellectual organization. Evaluating and evidencing impact is harder for some research disciplines than others [7]. Firstly, there is a fundamentally reflective, methodological way of organizing thinking and activity, especially concerning the formulation of a scientific hypothesis, the leading idea of the research, and the determination of novelty, among other aspects. This

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necessity arises from the need to manage knowledge about knowledge in relation to the tasks of coordinating the thinking and activities of many stakeholders during the process of expert evaluation and humanitarian support. Additionally, it pertains to the features of project-program developments, which can only be carried out reflectively. The second requirement pertains to the intellectual organization of thinking, specifically the theory of activity (methods of thinking about activity, alongside the abilities to act independently and reflect).

The real modernization of pedagogical education is, above all, the process of shaping an individual as a social being under the influence of all factors—ecological, socio-economic, ideological, psychological, educational, and more—rather than solely through pedagogical methods or specific teaching technologies. Research should be driven by dissatisfaction with the current state of higher and general education schools, based on substantial and essential grounds.

A researcher must be capable of identifying significant societal needs based on the analysis of the evolving sociocultural situation, determining the corresponding pedagogical perspective, formulating an appropriate goal, and establishing a sequence of steps for its implementation. This involves developing criteria for assessing the effectiveness of the designed practice and conducting control and adjustments to the functioning processes.

In the context of educational and research activities, several functions of the researcher can be distinguished [5, p. 113]:

− The ability to interpret social phenomena and translate them into the language of pedagogical goals and objectives.

− Diagnosing the condition of the designed object of technical activity.

− Methodically supporting the educational process.

− Selecting content appropriate to the planned outcomes.

− Constructing the educational and cognitive process considering the impact of the macro- and micro-social environment, among other factors.

Research methods and materials

To conduct a comprehensive and thorough analysis of foreign studies related to modernization and reform, and to identify key factors and trends influencing contemporary society and education, a comparative analysis of the results of these foreign studies was utilized. This approach aimed to uncover similarities and differences in the approaches to modernization and reform in different countries. The selection of methods for managing the processes through which individuals become aware of causal relationships in research activities and their ability to apply them in accordance with set goals and objectives, aimed at testing the hypothesis, involves revealing the researcher's insights about what is not obvious in the object, what they perceive that others do not notice.

This research is focused on identifying the conditions under which an individual can become aware of who they are as a person, what they represent as an individual, what positive and negative qualities they possess, what needs to be worked on, and what needs to be let go of. The subject of the research is the contemporary trends in global higher education and scientific inquiry.

A pedagogical experiment was used as a method when there was a need to determine and comparatively analyze the influence of specific factors or conditions on the course and effectiveness of the process, as well as to more accurately measure the parameters and outcomes of the process of individuals becoming aware of causal relationships in professional and research activities and their abilities to apply them in accordance with set goals and objectives.

The task of the pedagogical experiment was to determine, using qualitative and, where possible, quantitative assessments, the comparative effectiveness of various methods, techniques, organizational forms, conditions, and comprehensive new systems applied in the educational and

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cognitive process. The tasks were logically and chronologically interconnected, often requiring the formulation of sub-tasks for their resolution. The outcomes of this work are as follows:

− Identifying the main directions for the development of organizational, scientific-methodological, and personnel support measures by educational subjects when society transitioned from a relatively stable phase of history to a dynamic phase of development.

− Establishing the scope of educational activities for subjects when the goal of education became the enhancement of quality, mobility, and accessibility of education, meeting the needs of a developing post-industrial society and the individual.

− Determining the most challenging problems related to the formulation of goals and objectives, research, scientific novelty, and its significance, considering transformation as a direct result of targeted reforms.

The proposed scheme was used in designing a program for teachers to observe the emerging difficulties in the educational and cognitive activities of learners (Table 1).

Table 1 − The emerging difficulties in the educational and cognitive activities of learners

№	Aspects of pedagogical activity	Level of difficulty In percentage (%)	
		Significant	Average
1	**2**	**3**	**4**
1.	In the pedagogical process, the objective becomes subjective, transforming into the individual-psychological domain of the subject.	40	60
2.	The learning process particularly shapes the consciousness of the individual, as well as other parameters, relying on their level of formation.	70	30
3.	When constructing the pedagogical process, the scientifically justified selection of content, methods, and means of teaching is important, rather than mere diversity.	35	65
4.	Learning involves transforming the subject's activities, turning them from someone who does not possess certain knowledge, skills, and abilities into someone who does.	80	20
5.	Meeting professional needs involves resolving contradictions, leading to the emergence of new qualities in the subject and new objective conditions.	20	80
6.	Critical examination contributes to the development of pedagogical thinking and the enhancement of pedagogical culture.	45	55
7.	Overcoming the reproductive style of educational-cognitive activity and transitioning to a new educational paradigm ensures cognitive activity and independence of thought.	40	60
8.	Understanding that before discussing what needs to be done, one must understand what already exists and how it affects the future of education.	30	70
9.	Readiness to identify scientific problems in research activities and seek ways to effectively solve them.	30	70
10.	The subject's readiness for empirical research: analysis, comparison, synthesis, resulting in specific empirical concepts.	75	25

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Continuation of Table 1

1	2	3	4
11.	The ability of the subject to integrate subject knowledge, skills, and abilities across various educational domains, forming the substantive basis of functional literacy.	75	25
12.	Setting and solving cognitive, research tasks, leading to changes in the content of the subject's knowledge and skills.	35	65
13.	The ability to resolve situations that encourage the subject to ask questions to the teacher, clarify ambiguities, and delve deeper into the understanding of knowledge.	35	65
14.	The ability to make decisions based on sound judgment, i.e., without having all the necessary materials and without the possibility of processing information mathematically.	30	70
15.	A situation for self-assessment, analyzing the subject's own cognitive and practical work.	35	65

The methodology for studying the difficulties encountered by learning subjects.

Method №1. Frontal written interview on the readiness of learners for pedagogical and research work and overcoming difficulties encountered during this work.

Aim – obtaining initial data on the awareness of the cause-and-effect relationships in research activities by the learners and their ability to apply them in accordance with the set goals and objectives.

Duration – 40 minutes; number of participants (master's and doctoral students) – 52 people.

1. If the choice of methods depends on the research problem, objectives, subject, and hypothesis of the study, how do you determine the nature of using necessary operations at different stages of the research?

2. What determines the formulation of the research problem, as it leads to the formulation of the research topic, implying the determination and justification of the relevance of the study?

3. Special preparation of research subjects for a new area of activity - scientific research provides an understanding that neither knowledge of pedagogical science nor practical experience can replace it, although it is a necessary prerequisite. What is your solution version?

4. Chronological listing of who said what on a particular occasion cannot be considered a scientific analysis of the literature; it is an arbitrary annotation of works on the topic without presenting the author's own position. Give your interpretation of the answer.

5. The problem of logic is the question of truth, about the cognitive relationship of thinking to being. Can you provide an explanation or the true answer?

6. Subjects of educational-cognitive activity should master the principle: “what is valuable in others is not what I value in them, and not what they value in me, but what they value in themselves”. What is your answer?

7. It's not that the subject does not know or knows little, but that there is no understanding of both their own knowledge and their own ignorance.

8. Psychological engagement requires not so much the training of the subject's memory as the ability to think in terms of the material studied. How is this implemented in practice?

9. Substantive generalization means a theoretical image obtained in the human mind through mental operations establishing the unity of the system of concepts and their interrelationships and representing, thereby, the generalization of generalizations. Can you explain?

10. Consciousness is a component of the psyche, the process of the subject delving into internal mental experience, contemplating and memorizing it, evaluating its significance for their educational activities, these are subjective images of the objective educational practice in the

ISSN-p 2306-7365
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process of processing educational information. What is the mechanism of its implementation in practice?

11. Scientific research activity - if carried out more or less competently, by definition, is always aimed at objectively new results. How should it be carried out?

12. A true scientist must remember that direction in science means only the direction of the search for scientific truth, but not scientific truth itself?

13. Productive memorization is the ability to focus attention on the material being studied, a conscious setting for memorization, awareness of the need to memorize, logical, meaningful memorization, the use of comparisons and oppositions, the ability to connect the new with the old, the known. Explain the mechanism of implementation?

14. Intelligence is the ratio of the speed of assimilating novelty to the amount of existing information?

15. The subject not only assimilates the content of the educational material but also regulates, controls, and corrects their cognitive activity. Explain the mechanism of such action?

Interview Procedure

1. Subjects of learning activity are informed of the purpose of the interview: to find ways to overcome difficulties in their educational and cognitive work related to understanding cause-and-effect relationships in professional and research activities and applying them in accordance with the set goals and objectives.

2. The process of teaching is much less interesting than the process of learning, the importance of which is difficult to overestimate in the conditions of personal transformation. At the same time, valuable and meaningful learning is considered only when based on self-activity, self-regulation, and self-awareness.

3. Subjects are deliberately directed to the experience that creates their baggage: feelings, images, analyzed situations, decisions made and implemented. Modern education faces rapid changes and challenges presented by globalization, technological innovations, and changing societal expectations. Foreign researchers are crucial in examining educational trends and developing strategies to transform educational systems.

For example, Michael Fullan proposes a concept of educational change that emphasizes collective action and leadership [8]. He highlights the importance of fostering a culture of learning and innovation within schools. Similarly, Andy Hargreaves examines how education policies influence transformation within school systems [9]. He advocates for addressing teachers' needs and supporting their professional growth. Linda Darling-Hammond underscores the significance of education quality and teacher preparation, emphasizing individualized teaching and assessment approaches [10]. Meanwhile, Pasi Sahlberg analyzes Finland's educational successes, identifying principles such as equity and diversity that could be applied globally to enhance educational outcomes [11].

An analysis of international research on the modernization and reform of education reveals key factors and trends shaping contemporary society and education. These include:

1. *Technological Innovations:* Modernizing education often involves integrating new technologies. This includes digitizing the learning process, adopting interactive educational platforms, and expanding online education opportunities [8, 10]. These advancements enable personalized learning experiences, increase student engagement, and prepare learners for a technology-driven world.

2. *Globalization:* Globalization: The impact of globalization on education is profound, encouraging student and faculty exchanges, the development of international educational standards, and the promotion of multilingualism and cultural diversity [9]. Globalization fosters interconnected, culturally aware educational environments that prepare students for global challenges.

ISSN-p 2306-7365
ISSN-e 2664-0686

3. *Economic Changes:* The evolving needs of modern economies are driving educational reform. There is a growing emphasis on equipping students with skills relevant to the digital economy, such as programming, data analytics, and entrepreneurship [10]. Educational systems increasingly focus on preparing students to adapt to the demands of rapidly changing job markets.

4. *Socio-Cultural Changes:* Education modernization is also closely linked to socio-cultural shifts. Contemporary educational programs are increasingly inclusive, addressing the needs of diverse cultural and ethnic groups, promoting intercultural interaction, and fostering tolerance [11]. These efforts help create educational environments that celebrate diversity and inclusivity.

5. *New Approaches to Learning and Assessment:* Modern educational systems are rethinking traditional approaches to learning and student assessment. There is a greater focus on fostering critical thinking, collaboration, and student independence [8, 10]. Innovative assessment methods, such as projects, peer reviews, and self-assessments, are becoming more common, offering a more holistic view of student progress beyond traditional testing.

These research findings provide valuable insights into current societal and educational trends, helping to identify key factors driving change. Understanding these trends is essential for developing effective strategies and policies in education and social development. By considering these insights, educators and policymakers can create systems that meet the needs of a rapidly evolving world while fostering equity, inclusivity, and innovation.

Table 2 − A comparison of educational transformation across Kazakhstan, the United States, and European Union countries, focusing on different aspects of educational policies and practices.

Aspects of educationin educational policy and practice	**Kazakhstan**	**America**	**EU countries**
Educational standards and courses	The installation is undergoing a process of updating and adapting to modern requirements. Programs We teach students skills that are in demand in the labor market.	They are diverse and often change according to regional needs. The individualization of learning and the use of new technologies are emphasized.	The process of standardization of education in different EU countries, however, each country has its own national courses and curricula. The main focus is on the development of skills and competencies.
Financing of education	It receives significant government support, with increased investments in education in recent years.	Funding is heavily dependent on local taxes and federal subsidies.	It is subject to changes depending on the economic situation and political priorities. Education costs can vary significantly from country to country.
Teacher training	The process of modernization and improvement of the quality of teacher training is underway. Introduction of new training methods and support for professional development.	A variety of teacher training programs, including certification requirements and compulsory education. Much attention is paid to teaching scientific methods	Increased attention to the quality and professional development of teachers. Training programs often include practical experience and internships.

ISSN-p 2306-7365
ISSN-e 2664-0686

Continuation of Table 2

1	2	3	4
The use of technology in education	The introduction of information technology is actively promoted, especially in higher education.	The widespread use of technology both in educational institutions and in distance learning.	Frequent use of digital technologies and interactive teaching methods. Development of online courses and educational platforms.
Development of inclusive education	Inclusive education is actively developing, including the creation of special educational programs and conditions for teaching children with special needs.	The legislation guarantees the rights of children to education, including children with special needs. Promoting inclusive education and accessibility for all students.	The goal is to create an environment suitable for learning for all students, regardless of their abilities and needs. Providing additional resources and support.

Based on this comparative analysis, the following main points can be emphasized:

1. Differences and similarities: A comparison of the transformation of education in Kazakhstan, America and the EU countries reveals both similarities and differences in approaches to the development of the educational system.

2. Successful practices: Each of the countries under consideration has its own successful educational practices that can be an example for others.

3.Continuous development: Educational systems strive for continuous development and improvement in accordance with modern requirements and challenges.

4. The importance of adaptation: In a rapidly changing world and technological progress, the adaptation of educational systems to new challenges is becoming a key success factor.

5. The need to share experiences: It is important to take into account the experience of other countries and share best practices in order to improve their own educational systems.

In general, comparing the transformation of education in different countries is a valuable tool for understanding trends and successful practices that contribute to the development of the modern educational sphere.

Agreeing with V. Davydov's perspective on the dynamism of modern societal development, it is essential to add that the contemporary education system increasingly embodies the functions of personal socialization and social practice as a whole [1, p.18]. Traditional academic instruction is gradually being replaced by a qualitatively new educational system capable of modeling and reproducing the full richness of life connections and personal relationships within the learning environment. This shift necessitates a reevaluation not only of the goals and content of education but also of the pedagogical technologies, the meaning of the learner's activities, the level of their engagement, and their role in educational and research activities.

To determine the set of competencies necessary for each program and to define the outcomes of these programs, it is crucial to establish communication channels among all stakeholders—university faculty, industry representatives, professional associations, and students. Educational outcomes should be identified for each program based on surveys of these stakeholders. Curriculum design must become a continuous process.

Drawing insights from the research of M. Gibbons [2, p. 89] we make the following additions: first, we need to identify the main elements of the higher education system from the perspective of organizational theory. Second, we need to highlight the differences between these elements in various countries and their resulting implications.

ISSN-p 2306-7365
ISSN-e 2664-0686

The quality control process should also receive feedback from employers regarding the competencies of former students in both technical and behavioral domains. This requires universities to maintain alumni databases that reflect their effectiveness and competitiveness. To meet employer demands, graduates must possess deep fundamental knowledge in their specialized fields, general knowledge of problems and problem-solving methods, and specific applied knowledge tailored to job requirements (knowledge of hardware and software, key procedures, and regulations).

Comparing different countries is particularly valuable for uncovering unique traits and unconscious assumptions influencing subjects [12]. It is advisable to support the view that we need to transition from a concept focused on human needs and their satisfaction to one centered on human development. The primary goal of education should be self-expression and the full realization of individual potential and abilities.

Agreeing with A. Novikov and D.Novikov's opinion, we can add that the dynamism of modern societal development demands constant improvement of the education system and scientific inquiry. This highlights the necessity for a creative and research-oriented approach to addressing the challenges faced by the education system [5, p. 176].

While it is possible to agree with V. Davydov's perspective, the resolution of this issue seems to be hindered by the traditional form of transmitting useful information, which proves to be ineffective in this context [1, p. 128]. Only the high personal significance of humanities knowledge can serve as an essential condition for its assimilation. In the process of engaging with the world of humanistic culture, the explanatory procedure requires significant adjustment, as causal explanations of phenomena within a value system framework cannot address the existential problems of the individual.

Scholars E. Berezhnova and V. Kraevsky note that the results of pedagogical research are largely determined by the influence of the value-laden practical consciousness prevailing in society [13]. In addition, in modern socio-economic conditions, the situation fundamentally changes. In a market economy, knowledge and qualifications become the primary capital of a specialist. Issues of discipline and motivation for learning among individuals disappear—they want to learn independently. The focus is placed on the independent work of the individual and the self-organization of their educational activities.

The researchers N. Bordovskaya [14] and others note that the resolution of the goals and objectives of research depends on several objective conditions. As a remark to this opinion, it can be noted that there is insufficient awareness among subjects in the educational and research reality about the content and functions of phenomena such as "personal transformation", as evidenced by numerous results of the processes of modernizing education system, which periodically succeed one another, simultaneously indicating the complexity and urgency of implementing tasks for "personal transformation" in the social, psychological, and pedagogical spheres. To be fair, one cannot underestimate the importance of the results obtained: the old system has opened up to new ideas, the new system is in the process of formation and seems to be full of youthful enthusiasm. But is it excessive to say that it is still in search and has only an indefinite idea of itself, and that the old system has rather complemented itself with successful concessions than been renewed.

Results and Discussion

The experiment aimed to evaluate the readiness of 52 master's and doctoral students for pedagogical and research activities. It sought to understand their ability to overcome difficulties and apply cause-and-effect relationships in their professional work. Using a frontal written survey, the study collected data on participants' awareness of these relationships and their practical application in accordance with research goals and objectives.

ISSN-p 2306-7365
ISSN-e 2664-0686

Methodological Choice and Research Stages

Participants demonstrated a strong understanding of how methodological choices are influenced by the research problem, objectives, subject, and hypothesis. Most respondents emphasized the importance of aligning methods with the evolving nature of research stages. This implies that while selecting methodologies, researchers should remain flexible and adjust their approaches based on ongoing findings and emerging challenges. This flexibility is crucial for addressing dynamic aspects of research and ensuring methodological rigor throughout the study.

Formulating the Research Problem

The process of formulating a research problem was closely tied to identifying gaps in existing knowledge and understanding the study's significance. Participants demonstrated a clear understanding of how a well-defined research problem leads to a focused and meaningful research topic. This step is crucial for designing a study that is both relevant and methodologically sound, ensuring that efforts address important and impactful questions. Special preparation for research activity.

Participants acknowledged that preparing for research involves more than having general pedagogical knowledge or practical experience. Effective research preparation requires mastering specific skills, such as formulating research questions, designing studies, and applying analytical methods. This highlights the need for focused training and hands-on experience to complement foundational knowledge, equipping researchers with the tools necessary for conducting high-quality studies.

Analyzing Scientific Literature. The survey results showed strong agreement on the importance of critically analyzing scientific literature rather than simply listing references in chronological order. Participants emphasized that an effective literature review should synthesize existing knowledge, integrate key findings, and build a coherent argument. This approach not only improves the quality of research but also ensures that the literature review adds value to the overall study.

The experiment provided valuable insights into students' preparedness for both pedagogical and research activities. It underscored the importance of flexibility, critical thinking, and self-awareness in the research process. Based on these findings, several recommendations can be made:

1) Enhanced Research Training: Develop specialized training programs to help students acquire essential research skills, such as designing studies and analyzing data.

2) Critical Literature Analysis: Promote the practice of synthesizing and critically evaluating scientific literature as part of academic training.

3) Intrinsic Motivation: Encourage self-reflection and foster intrinsic motivation to enhance learning outcomes and engagement in educational settings.

4) Active Learning Strategies: Integrate active learning techniques and critical thinking exercises into the curriculum to boost psychological engagement and knowledge retention.

Conclusion

In conclusion, the authors of the study have been convinced of the validity of the opinion that the awareness of causal relationships in research activities and the ability to apply them in accordance with the set goals and objectives serve their purpose if they take on a proactive nature in relation to the technology of personal transformation. This will enable individuals to understand their character to the level of crystal clear consciousness, capable of solving any social, pedagogical, and research tasks by extracting the essence of phenomena from them.

Its purpose is to teach the educational subject to think independently and creatively, to acquire skills in obtaining new knowledge, to solve professional, research, and personal problems, to forecast the consequences of their decisions, and to take responsibility for both professional-research and universal-humanitarian matters. It is logical to assess one's capabilities in the

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development and research of education, to determine the direction of psychological-pedagogical activity not only in relation to the immediate goal but also in terms of one's involvement in what is happening in the educational space.

Accordingly, the connection between essence and phenomenon is of significant interest when transitioning from sensory to rational cognition. What is especially important for the educational-cognitive process, scientific research, and dialectical connection between the phenomenon and the essence that determine the ways of transitioning from describing the phenomenon to its law-based explanation, is the sufficient number of transformational programs that objectively help the subject transform the research reality. Establishing the essence of the research reality is closely related to the reasons for the emergence and development of this phenomenon.

By consciousness, which is a characteristic of transformation, we mean the ability of the educational subject to idealize (psychically reflect) educational and research reality, to transform the objective content of the subject into the subjective content of a person's mental life, as well as the specific socio-psychological mechanisms and forms of such reflection at different levels.

Modern education is a participant in the emergence of a new global community and finds itself at the heart of issues related to personal development and various communities. It is built on the individual, based on their inner states and feelings, where character represents a consciously open crystal “sphere” to the world, always in a positive mood. The task of education is to provide everyone with the opportunity to showcase their talents and their entire creative potential, implying for each the possibility of realizing their personal plans. Achieving this goal requires a reevaluation of the ethical and cultural aspects of education to provide everyone with opportunities to understand others in all their diversity and to comprehend the world in its chaotic movement towards some form of unity.

It should start with learning to understand oneself, making internal efforts based on knowledge, reflection, experience, and self-criticism. Teachers should detach themselves from the surrounding educational environment and oppose themselves to it as subjects rather than objects. The goal of transformational formation is to promote comprehensive development of autonomy and objective assessment of work quality. The quality control process should also receive feedback from employers assessing the competencies of former graduates in technical and behavioral fields. This requires educational institutions to maintain databases of alumni, reflecting their performance and competitiveness.

In accordance with the law of interdependence between the preparation of specialists and the level of their skills corresponding to the requirements of the labor market, educational institutions should consider that the cycle of knowledge creation, dissemination, training, and utilization is becoming shorter. Therefore, these phenomena are expressed through the relationship between cause and effect categories, which mutually condition each other, and their essential characteristics relative to the educational subject are flexibility, diversity, and accessibility in time and space.

Such characteristics of educational and research activities, in addition to the need to adapt to changes in professional and research activities, should turn into a process of continuous development of human personality, knowledge, and skills, as well as the ability to make judgments and take various actions. It should ensure that the educational subject understands themselves and the surrounding educational reality, facilitating the fulfillment of their social role in achieving set goals and objectives.

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