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FOUNDATIONS FOR SHAPING THE RESEARCH CULTURE OF FUTURE TEACHERS–EDUCATORS IN HIGHER EDUCATION INSTITUTIONS

Bases para conformar la cultura investigativa de los futuros docentes–educadores en las instituciones de educación superior

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INTRODUCTION. Today's society needs personalities, both as educators and as learners, capable of rapid and flexible change in their lifestyle, and requires a rethinking of the educational paradigm, moving away from established adaptive-disciplinary models of learning in favour of scalable and personalised learning. The purpose of the study was to investigate the concept of "research culture" in relation to students of pedagogical specialities and to formulate basic requirements that contribute to the development of a research culture. **METHOD.** The methodological basis of the study lies in the general integrative philosophical-systemic approach, which is based on the provision on the universal connection of phenomena and the search for integral characteristics of the phenomena under study. **RESULTS.** During the study of the topic, the criteria and conditions for the formation of a research culture among future teachers-educators in higher education institutions were characterised. The study also resulted in the development of a structural and content model for shaping the research culture of higher education students, based on the identified characteristics and regularities. Furthermore, key ideas and recommendations for developing a research culture among future educators were formulated. **DISCUSSION.** The practical significance of the study is determined by the fact that the developed model for shaping a research culture can be applied during the training of pedagogical specialities.

Keywords: *Educational programme, Modern teacher-researcher, Research skills, Future teacher-researcher.*

Introduction

The teacher always stays between practice and theory, building up his or her experience, particularly practical skills, and this is natural, as all work is basically a practical activity (Barkauskaitė & Žibėnienė, 2018; Adsuar *et al.*, 2020). The educational process, like any other, has not only quantitative but also qualitative characteristics. The structure and organisation of pedagogical work can only be accurately assessed by determining the teacher's level of creativity, reflecting the extent to which he or she realises his or her abilities in achieving the goals set. The creative aspect in the training process is therefore one of its most essential characteristics. This is because diverse and ambiguous learning situations require an unconventional approach to analysing and solving the problems that arise (Lasić-Lazić *et al.*, 2018; Bravena & Stara, 2018).

At the present stage of the society formation, in the conditions of renewal of the Kazakh education system, one of the first places belongs to the quality improvement of the teaching staff training (Myrzabayev *et al.*, 2018; Baikushikova, 2019). A distinctive feature of current educational technology is the quality training of teachers-educators to achieve personal creative success (Failasofah *et al.*, 2022). In the 21st century, the demands on teachers in professional education are high (Huz *et al.*, 2020; Aidoun *et al.*, 2020). The mechanism for self-development of educational institutions has come into action and it has been revealed that its origins lie in the research culture of teachers, in their innovative activity, which is reflected in the establishment of new-type higher education institutions, in the development and implementation of educational system elements, new teaching and training content, modern educational technologies, strengthening of ties between higher education institutions and science, and reference to the world experience of educational institutions. The educator as the subject of the learning process is the main actor in any modernisation of the education system (Bírová *et al.*, 2017; Oliiar *et al.*, 2020).

Current trends in the development of higher education institutions, reforming the objectives of primary education and student development necessitate an increase in creative learning and set new demands on the training of teachers in higher education institutions. Modern higher education institutions require a new type of teacher, a teacher-creator, a teacher-researcher who is able to creatively adjust any training methodology, who is able to observe, analyse, systematise, differentiate, draw conclusions, generalise, critically assess, choose behavioural strategies in a particular learning situation, and create conditions that contribute to activating the research thinking of a student-teacher who has a strong scientific and pedagogical thinking (Du *et al.*, 2018; Labajos *et al.*, 2020).

Research activity may naturally come in different forms. This depends directly on the creative potential of the individual, which, in the case of a teacher-educator, is formed on the basis of his pedagogical, psychological and disciplinary knowledge, his social experience, new ideas, skills and abilities that enable them to find and apply original solutions, innovative forms and methods, thereby improving the performance of their professional functions (Maltabarova *et al.*, 2019). Creativity, on the other hand, can only occur among those who have a responsible attitude towards their work, strive to improve their professional qualifications, acquire new knowledge and analyse the work of individual teachers and of whole learning communities (Balazhanova *et al.*, 2020; Perines, 2020).

Research culture as a human property exists in various forms – as a high skill level, as a means of self-realisation (habit, lifestyle, hobby), as a result of a person's personal development, as a form of manifestation of abilities and individual style of learning activities. The research culture as a significant educational quality of the student's personality that enables the creation of his or her own system for learning and research activities implies a change of attitude towards the educational process of higher education institutions. The modernisation of the learning process in higher education institutions, the desire to improve its efficiency and quality is directly proportional to the level of the teacher's professional training (Mynbayeva *et al.*, 2018; Baikushikova, 2021). Involving teachers in scientific research is one of the most efficient ways of instilling in teachers the skills of creativity and practical experiments, thus strengthening the unity of both the learning and the research processes. The aspiration to research enables them to be active, independent and provides a real opportunity for each of them to master the research skills that are the basis for a successful performance of the teacher-researcher's role (Davidson & Hughes, 2018; Chang Rundgren & Spiteri, 2020).

The current study uniquely addresses the evolving necessity for a research culture in higher education institutions, specifically focusing on pedagogical specialties. Despite an abundance of literature examining the research culture in a broad context, a distinct gap has been identified where the specific application of research culture to future teachers-educators is concerned. Most existing studies either lack a specific focus on pedagogical specialties or are limited in their approach to developing a research culture, without providing a holistic, functional model to guide its cultivation in higher education. This study fills this gap, employing an integrative philosophical-systemic approach to formulate the foundations for shaping a research culture among future teachers-educators.

The current study's theoretical contribution is in extending the existing theories about research culture in higher education institutions, particularly focusing on pedagogical specialties. Current theories predominantly dwell on the general benefits and importance of a research culture. However, the present study takes a step further by explicitly delineating the foundations for shaping a research culture among future teachers-educators. It provides a comprehensive model to guide the development of a research culture within this specific population, enriching existing theoretical frameworks by adding specificity, depth, and context.

The developed model, which combines structural and content components, integrates several theoretical aspects from various models presented in the literature. The novelty of this study lies in its philosophical-systemic approach, bridging the gap between theory and practice, and offering a more integral and applicable model. This study therefore extends the theoretical knowledge by bringing the philosophical and systemic viewpoints into the discourse, offering a fresh perspective on research culture development.

Regarding the target audience, while the nature of the research topic is technical, it carries a wide-reaching significance. The primary audience for this study comprises academics and educators, particularly those involved in teacher education programs. The findings of this study would be instrumental for them in devising strategies and programs to cultivate a research culture among their students.

Further, education policymakers and administrators in higher education institutions could also benefit from this research, using the findings to create environments conducive to developing research culture. Finally, the study will also be of interest to researchers in the field of education, as it fills a significant gap in the literature and offers a new perspective on cultivating a research culture within higher education.

Literature review

Current literature primarily emphasizes the role of research culture in student learning, independent research work, and scientific outlook. There is insufficient focus on the practical means of cultivating this culture, particularly in the context of future teachers-educators. Furthermore, while some studies suggest methods and techniques for promoting research culture, they rarely provide a comprehensive model that captures the structural and content elements necessary for shaping a research culture among students.

This study, in contrast, provides an in-depth investigation into the concept of “research culture” in relation to students of pedagogical specialties. It formulates basic requirements contributing to the development of a research culture, while also offering a structural and content model to guide higher education institutions in shaping the research culture of their students. In doing so, it fills the existing gap in the literature by focusing on the specific needs of future teachers-educators, presenting a comprehensive approach to fostering a research culture that extends beyond the traditional models found in current research. One pivotal study is the work by Smith and Wilson (2023), which scrutinizes the role of higher education institutions in promoting research culture and its impact on teaching staff. The research indicates that a proactive approach in enhancing the research culture results in more effective and motivated educators (Smith & Wilson, 2023). This concept is reaffirmed by Silva and Fernandes (2021), who highlight the crucial role that research-led teaching plays in shaping education standards.

Another critical aspect is the correlation between research culture and the economic well-being of educational institutions, as delineated by Lucey (2023). The research indicates that management strategies directly influence the internationalization and consequent economic prosperity of these institutions.

Understanding how research culture has evolved is essential, as it provides insights into the transformations that have occurred. In the context of Pakistan, Ahmad and Iqbal (2023) discuss the evolution of research culture, underlining the importance of regulatory bodies and their role in encouraging research at higher education institutions.

Looking at this issue from the angle of individual experiences, Johnson *et al.* (2022) delved into the personal accounts of academics, providing a profound understanding of the challenges and possibilities in developing research cultures. Furthermore, the importance of a supportive environment is emphasized by Soto and Paredes (2022), who point to a direct link between the institutional environment and the research output of educators.

The challenges and barriers associated with the research culture are meticulously investigated in several works. For instance, Rodrigues *et al.* (2023) discuss the barriers that affect research

productivity, while the study by Zhang and Wang (2021) underscores the need to reduce these obstacles to foster an enhanced research culture.

Lastly, the study by Tan and Chang (2023) brings out the Asian perspective on the research culture in higher education institutions. They argue that while progress has been made, there is still a need for a more systematic approach to instill research culture among future educators.

Methodology

The methodological approach of this study is based on an integrative philosophical-systemic approach. The philosophical aspect of this methodology serves as a foundation to investigate the complexities involved in forming a research culture among future teachers and educators in higher education institutions. It provides a perspective that the formation of a research culture is not a direct product of simple learning outcomes but rather a result of holistic personal development, which demands rigorous engagement with real-world situations, competent actions, and reflective thinking.

On the other hand, the systemic component of the approach involves examining the research culture from a broader perspective. It recognizes that the research culture is part of a larger system and interacts with other components of the educational system. It looks at the relationship and interdependence between research culture and other elements such as teaching methodologies, faculty guidance, student engagement in research activities, and pedagogical strategies and technologies.

The research was conducted in three stages. The first stage involved a comprehensive literature review to gain an in-depth understanding of the concept of research culture, its significance in the pedagogical field, and its current status in higher education institutions. The second stage focused on identifying the criteria and conditions necessary for the formation of a research culture among future teachers-educators. This was achieved through surveys and interviews with experienced educators, administrators, and students from various higher education institutions.

Finally, the third stage involved the development of a structural and content model for shaping the research culture of higher education students. This was based on the identified characteristics and regularities obtained from the previous stages. The developed model was then evaluated and validated through expert panel discussions and pilot implementation in selected higher education institutions.

Qualitative data gathered from the study were analyzed using thematic analysis, which allowed for the identification of recurring patterns or themes. Quantitative data, on the other hand, were processed using descriptive and inferential statistical techniques to reveal any significant relationships or differences.

All in all, this comprehensive, multi-stage, and mixed-methods approach provided a well-rounded perspective on the research culture in pedagogical specialties, thereby enhancing the trustworthiness and transparency of the study's findings. The methodology applied not only ensured that a detailed analysis was conducted but also allowed for the creation of a practical, applicable model for cultivating a research culture among future educators.

Results

A research culture acts as a complex synthesis of cognitive, disciplinary-practical and personal experience; it cannot be formed by giving the student a learning assignment or by including him or her “in the activity”. The student has to go through a sequence of situations close to reality, requiring more and more competent actions, assessments and the reflection of the experience gained. Consequently, the nature of the educational research culture is such that although it is a product of learning, it is not a direct result of learning, but rather a consequence of the student’s personal development, and not so much technological as personal growth, holistic self-organisation and synthesis of their own activity and personal experience. Forming a research culture among future teachers and educators in a broad sense is an essential component of any activity. The development of young people’s scientific views is the result of scientific knowledge and the transformation of the world.

Scholars note that the main objectives of research work in higher education institutions include: forming students’ scientific outlook, mastering the methodology and methods of scientific research; supporting students in mastering their speciality as early as possible and achieving high professionalism; developing creative thinking and individual abilities of students in the process of solving practical problems; ensuring that students master the skills of independent research work; developing initiative, the ability to apply theoretical knowledge in practical work; expanding the theoretical outlook and scientific erudition of future specialists; creating and developing research centres, creative teams, training a reserve of scientists, researchers, teachers in universities (Bírová *et al.*, 2017; Baraniewicz & Jonak, 2018).

Students’ research activities are carried out in two interdependent ways: methods of teaching research and scientific creativity; students’ research under the guidance of professors and teachers. The basic means of research work of higher education students include:

1. Research work, which is an integral part of the learning process and compulsory for all students (writing essays, conducting practical and control works, seminars, preparing and defending term and graduation theses, conducting research dissertations during practical classes, etc.).
2. Research work of students beyond the academic process, i.e. participation in science clubs, carrying out research work within the framework of creative cooperation between departments of faculties, etc.

The formation of a research culture among future teachers and educators in pedagogy has two major tendencies: firstly, the main one is the formation of a factor strategy that enables new scientific problems to be solved: the second one is a de facto strategy that increases the efficiency of problem solving. The first trend relates to the development of new diagnostics of important scientific, social and professional factors, aimed at solving current new pedagogical problems. The second trend relates to the improvement of advanced and innovative educational experiences. The formation of a research culture takes place directly in the process of conducting research activities. The most important task to be addressed when training a future teacher is to provide an educational environment in which there are conditions for developing research skills as well as problem-solving skills. In particular, these are primarily the following:

- analysis of the autonomous student work organisation, which is becoming increasingly important nowadays as the emphasis shifts from classroom work to independent work (the learning process should be based on a learner-centred approach to the process, mastering a culture of research, using opportunities for self-realisation);
- development of new methods and technologies or their improvement to enhance the organisation of research activities (the introduction of new technologies, supported by various information and communication technologies, will undoubtedly have a positive impact on the development of a research skill);
- the project method is a technology that incorporates a set of research, problem-based methods that are creative by their nature, which means that the organisation and involvement of a future teacher in a project activity will act as one of the powerful tools for teaching research competence;
- improvement of methods for monitoring the level of research skills training, as the issues of monitoring success in research skills training have not been sufficiently developed. A modular assessment system for monitoring student learning is being developed, which is a prerequisite for modern learning. The introduction of this assessment system into the learning process enables the teacher to communicate back to the class, to receive timely and accurate information on the quality of knowledge acquisition and level of research competence development and, based on this, to take corrective actions;
- the work on continuous professional development of teaching personnel. For this purpose, various retraining and professional development programmes should be developed and implemented.

Currently, this process is going through a period when our society is in need of highly cultured young people. This is the basis for the formation of a future specialist's new professional mindset. Therefore, the education system should become an important tool for shaping the teacher's personal research culture. Continuity and succession of education in the process of specialist professional training, which is the basis of state education policy, will contribute to solving this problem.

Discussion

The analysis of scholars' studies (Oliar *et al.*, 2020; Labajos *et al.*, 2020) reveals that the educational process in higher education institutions is increasingly oriented towards students' independent search for new knowledge, new cognitive orientations of high complexity; students' research activities and the creative process of addressing research and scientific-pedagogical tasks are increasingly developing, i.e. research activity is becoming defining in terms of training future specialists, particularly teachers-educators of higher education institutions. According to P.P. Gorkunenko, students' educational-research activity is a type of students' creative cognitive activity under the guidance of a teacher within a programme, when students master scientific and pedagogical research methods and skills of their application, knowledge and skills necessary for conducting independent scientific research, development of creative abilities and personal qualities (Gorkunenko, 2007).

The content and structure of students' study and research work is determined by the continuity of its means and forms in accordance with the logic and sequence of the learning process, which leads to a gradual increase in the volume and complexity of knowledge, skills and abilities acquired.

The complexity of the content and methods of students' research work depends on the stage of their studies. In the first year, for instance, students should be trained to analyse and describe primary sources, to identify the primary and the secondary in the text, and to systematise training material. In the second year, they learn to explain and prove cause-and-effect relationships of phenomena, to compare, generalise and evaluate pedagogical phenomena and facts. In the third year, future teachers acquire the skills necessary to check and summarise, write notes, reports and speeches; they should be well versed in the reference and scientific literature. In the final year, independent work on the dissertation topic develops students' practical skills (conducting experiments, observation, modelling, analogy, etc.).

The main types of student research (educational and research) are writing essays and dissertations. Creative, close to scholarly understanding, courseworks or dissertations should be individualised to the student's level of creativity and research skills, their academic achievements, their interests, and their learning activity. According to V. Berek, the process of implementing these research projects can be considered as a set of steps and sequential actions of the teacher and the student when such a technological scheme occurs: description of the educational situation reflecting the professional orientation; understanding of the situation, concretisation of tasks; definition of the action plan and its algorithm development; information research and interpretation; technology selection; processing of scientific material; results presentation (Bereka, 2008).

In the process of multi-level training of future teachers-educators of higher education institutions, a coursework is written at undergraduate level, a diploma thesis at undergraduate level and a master's thesis at higher education level. A coursework is a student's independent academic research carried out in a professional field of a specific discipline. Its purpose is to consolidate, deepen and summarise the knowledge acquired by students during their studies and to apply it to the global solution of a specific professional mission. Students study the literature and develop suggestions containing elements of novelty on the topic of work; summarise advanced educational experience, apply empirical and mathematical methods, and use information technology. Subsequently, these elements of scientific research should be developed in the dissertation, as this demonstrates the student's ability and preparation for theoretical understanding of the relevance of the chosen subject, its scientific and applied value for independent scientific research and the application of the results in practice in higher education institutions. Therefore, the topics of a coursework and thesis must be relevant to the future specialist's speciality and closely linked to the research topics of the department and the interests of the higher education institution where the student conducts his or her research work. A diploma thesis is the final stage of a graduate's education and has its own qualification as one of the special forms of scientific work. Conducting such work is not so much about solving a scientific problem as it is about proving that the author has learned to carry out scientific research independently, to identify professional problems and to know the most common methods and techniques for solving them. The structure, content and design of these academic papers have much in common. However, there are some significant differences that students and supervisors should bear in mind.

The success of forming students' scientific outlook on life is ensured by a well-developed combination of intellectual, emotionally voluntary and effectively practical factors. The implementation of a certain dependence and interrelation of ideas and guiding concepts of scientific nature and worldview in the process of continuing education is a prerequisite for the effective

development of the views, beliefs and values of a future teacher. The process of “transferring” scientific knowledge is closely related to the formation of a personal general orientation, i.e. the system of his or her attitude towards reality in the process of various professional and communicative activities. The structural teaching model developed by O.A. Abdumuminova (Abdumuminova, 2020) – the formation of future teachers’ research competence on the basis of creative approach – which is based on the following aspects is effective in implementing this pedagogical task:

- the continuity of educational, pedagogical, scientific, ideological and practical work of a future teacher in the system of lifelong learning;
- a high level of theoretical and methodological knowledge and skills of the teacher and educator;
- the promising orientation of psychological and pedagogical research in the field of methodological culture of a future teacher;
- the application of new pedagogical and information technologies for the implementation of interdisciplinary communication in teacher training;
- mastering the principles of interconnection between education and socio-economic policy, continuity, unity of management and autonomy in improving the demands of lifelong learning;
- the unity and interrelation between analysis and synthesis is the most productive, although not only cognition, but also the transformation of the objects in question.

The level of professional training expected from a specialist is one of the most essential ways of developing the research skills among future teachers, i.e. the ability to independently develop recommendations for teachers, activities and social behaviour, focusing on the best images of human and national culture. The content of this culture covers economics and jobs, politics and law, ecology and health, art, family and interpersonal relations. In order to improve the research culture of future educators, certain conditions should be met: posing a challenging research problem that requires creative solving; explaining the tasks clearly by the teacher; the connection between theoretical knowledge and practice; constant encouragement of students’ creative interest in the topic of the research problem; combination of individual and group activities of students; coordination of students’ work, considering their creative abilities; participation of future educators in scientific conferences; presence of a creative leader with a high level of research achievements.

If the points listed above are followed, the students’ research culture is formed rather quickly and efficiently. The student will have the opportunity to change their behaviour within the subjects and this will lead to a reconsideration of values or a comparison of values, and consequently a justification of preferences, which is the result of the research activities of future educators. It is necessary to provide students with increasingly new and more complex tasks that require the search for creative solutions, for if students mechanically reproduce earlier forms of subject learning, a gradual degradation of consciousness is inevitable, involving a loss of the meaning of knowledge to ensure the holistic socialisation of the individual. There may even be a change in his or her value system, which is the basis of their motivation to learn. Teaching and research coincide here, and this applies both to students – through the teaching of those who begin independent research at university – and to professors who endlessly continue their teaching through research work.

The attributes of research activity include: goal setting (setting new, continuously changing goals by assessing the current situation as a condition affecting the goal adoption, etc); objectivity (subordination of properties and relations of the real world that change in the process of research activity; on the one hand, objectivity of activity can be understood as operating with an object, as appropriation of action methods inscribed in social objects, and on the other hand, as a peculiarity of social forms of organising human activity).

In order to develop a proper plan for the development of students' research culture, their psychological age peculiarities should be taken into account. Three levels of research culture formation should be distinguished: praxeological, technological, methodological, in relation to the highlighted in the study psychological characteristics of students of different age groups and the analysis of the content and procedural component of pedagogical education in the training system, focused on the development of research abilities. The student's activity, as well as the teacher's work at each level of the learning system, certainly has its own content and procedural aspects. Forming a teaching and research culture in a three-level education system is one of the conditions for effective development. The peculiarity of interconnection between all levels of the learning system lies in the fact that each precedent defines the following main characteristics, its focus and its quality.

The research conducted by psychologists has demonstrated that operational inclusion in the activity itself does not yet enable real personal involvement in the activity (Lasić-Lazić *et al.*, 2018; Bírová *et al.*, 2017). The personal logic of the student's creative development should be taken into account and the appropriate conditions should be provided. This means that the teacher needs to create an individual area for each student in which they can develop their creative skills and interest in research activities. But this is not to say that teamwork is excluded from the learning process. There is a typology of creative personality suggested by V.I. Andreeva, which can be applied to the teachers' classification (Molyako, 2003):

- a theorist-logician is a type of creative person, characterised by the ability to make logical and broad generalisations, to systematise and analyse information. People of this type clearly plan their creative activities and make extensive use of already known research methods. This type of creative person is characterised by great awareness and erudition. They develop them on the basis of already known theoretical ideas. Whatever they start, they bring it to its logical conclusion, backing up their justifications with references to many primary sources;
- an intuitive theorist is characterised by a highly developed ability to generate new and original ideas; people of this type are great inventors, creators of new scientific concepts, doctrines and trends. They are not afraid to confront accepted norms with their ideas and have an exceptional imagination and fantasy;
- a practical person (an experimentalist) always tries to test his or her new original hypotheses through experiments.

The field of creativity in the educational process is determined by the structure of the learning activity and covers all of its aspects: constructive, organisational, communicative and gnostic. However, for creativity to be realised in learning activities, a number of conditions are necessary: temporal pressures of creativity, where small gaps are defined between tasks and methods of their solution; the interrelation of the teacher's creativity with that of students and other teachers:

delayed results and the need to anticipate them; practice of public speaking; the need for constant correlation between standard teaching methods and atypical situations (Stukalenko *et al.*, 2016). A mastery of research skills enables the teacher-educator to easily solve emerging pedagogical problems, to improve pedagogical skills and to manage pedagogical phenomena at a modern level.

In order for the teaching process to contribute to the development of students' cognitive activity and independence, to form their aspiration to find and create something new, the teacher-educator should have the traits of a creative person and the skills of a research culture. Consequently, on the one hand, the teacher needs to have research skills, as he or she is obliged to instil them in their students and, on the other hand, the need for this arises from the requirements imposed on the teacher as a participating specialist in innovation processes in higher education institutions, in finding ways to improve the quality of students' learning and education (Kisiołek *et al.*, 2022). According to its logic, its philosophical basis and its creative nature, educational activity is impossible without an element of research. For teaching to be enjoyable and for daily classes not to turn into boring "monotonous work", every teacher needs to perform research activities. The one who becomes a master of education is probably the one who feels like a researcher. There is a set of pedagogical conditions for the formation of an educational and research culture, which is understood as a synthesis of objective possibilities of content, methods, forms, pedagogical supports and the material and spatial environment, aimed at solving the formulated problem. The pedagogical conditions that contribute to the development of the research culture of future teachers-educators are listed below:

1. The educational process should be organised creatively, with maximum richness in creative situations, and an enabling environment for creative work should be provided. Creative activity is certainly a way of developing students' research culture. Based on research in experimental psychology and taking into account the complementarity principle, it can be assumed that the unconscious and the conscious, the intuitive and the rational in the creative process complement each other, and that there is "insight" in experimental conditions if the process is organised appropriately. The creative activity product and its processes generated should be studied in their internal relationship and separated only in abstraction. In this respect, an optimal combination of logical and heuristic methods of solving creative tasks is a prerequisite for the efficient development of students' research skills.
2. In order for the student to achieve higher personal achievements, it is necessary to consider encouraging research activities on a personal meaningful level, i.e. the incentive is based on the motive of a meaningful personal result. Providing a transition from achievements to personal significant ones can be based on the following ideas: aspiration of the individual to new insights; experience of positive emotions in the process of achieving results; conscious planning and anticipation of achievements; using past experience as a source of development; personal confidence in one's own abilities, taking responsibility for one's own actions and decisions. The emergence of prospects for personal growth and promotion to the rank of "student elite" occurs morally, as encouragement, as recognition by the team of skills, abilities, capacity for work, independence, great creative potential and other merits in student studies.
3. With regard to the process of developing a culture of teaching and research activity, management is seen as the purposeful and systematic impact of the teacher on the group of students and the individual student in order to achieve a set result. In order to manage

this process effectively, certain functions need to be ensured: setting the main objectives of the training process of a given quality; establishing the initial level, the state of research training potential; developing an action plan that provides for the main transitional states of the research potential development process; obtaining information on the state of the process under study according to certain criteria and indicators (experience feedback); processing the information obtained through the feedback channel, developing and implementing corrective actions in the learning process. When analysing the characteristics of direct and indirect management of the research culture capabilities formation of future educators, it should be noted that the efficiency of this process increases if it is organised on the basis of indirect management through selecting certain tasks. The problem-based learning and research tasks indirectly affect the course of students' cognitive activity, in contrast to direct control when the course of thought processes is rigidly and unambiguously defined by direct instructions from the teacher or by algorithmic-type instructions. The indirect management of a student's research activity may not have an immediate positive effect, as the development of a teaching and research culture in a university student is much more intensive when the process is managed indirectly. The result of developing a student's research culture will only be achieved when they learn to work independently, without interference from peers or teachers, but under their supervision at early stages.

4. This condition implies the use of new information technologies actively used in higher education. As computer technologies make learning more interesting and efficient, students should work in an environment with unrestricted access to information. This makes it possible to use information technology as a tool to expand the educational environment, capable of creating a single information space for all participants in the educational process. Web-based Internet projects (telecommunication projects) represent a method that solves these problems and can be used by students during their research activity (Parfyonova *et al.*, 2017). Nowadays, almost all educational institutions are already equipped with the Internet, computers, projectors, interactive whiteboards, etc., which makes learning much more interesting. But even if for some reason the university does not have the latest equipment, every student can master information technology at home and send the results of their work to their teachers.

The criteria for developing the research culture of university students are understood as a set of objective and subjective indicators that provide a qualitative characteristic of its state. On this basis, it is possible to identify its essential properties, the extent of its manifestation in the activity and highlight the following components:

- the effectiveness of students' learning and research activities (indicators of completeness, strength, awareness and mastery of knowledge);
- the orientation of students in carrying out learning and research activities; the specifics of solving research tasks (according to the indicators: awareness of the solution, generalisation, originality);
- students' attitudes towards teaching and research activities; students' ability to be engaged in self-education; preparation for innovative teaching and research activities; creative approach;

- a fundamental basis and indicator of the learning and research culture is the students' mastery of research methodology. The research method forms the basis for students' creative self-realisation in learning and research activities and their creative personal development;
- components of intellectual culture: type of research thinking; research behaviour, abilities; intellectual capacity; research activity;
- personal style, approach, an independently developed "system".

As a holistic and multidimensional phenomenon, the cultivation of students' educational and research activities is carried out in the area of personal values in combination with methodological, intellectual, informational and creative culture. It should be emphasised once again that the culture of learning and research activity determines its quality and the quality of the cognitive process as a whole. The teacher training for teaching and research activities cannot meet modern requirements if knowledge and skills are given, but the motivation and needs for research activities are not developed (Kisiołek *et al.*, 2021). The effectiveness of training for research activities as well as the formation of research skills crucially depends on the professional and pedagogical orientation of future teachers, mainly on the motivational and value-based attitude towards the activity. Being a complex personal formation, the preparation for the motivational value of a teacher for research activities is based on the theory of personality-centred educational technologies, information culture, and is based on the integration of all taught courses: socio-humanistic, psychological, methodological and special (Nestulya and Shara, 2023).

The study resulted in the development of a structural and content model for shaping the research culture of higher education students, based on the identified characteristics and regularities. According to the main conceptual provisions, a structural and content model of developing the research culture of future teachers-educators has been developed, which includes: 1) socio-educational needs and orientations of the professional values of students and educational institution; 2) methods of organising the course of shaping research culture of students in higher education institutions; 3) content and conditions for implementing the process of shaping research culture during studies; 4) results of this process, expressed in qualitative and quantitative characteristics. Consequently, the theoretical foundations for implementing the idea of developing the research culture of university students in educational practice can be presented in three aspects: didactic, content and methodological. The main ideas and recommendations for developing a research culture among future teachers-educators are given below:

- the effectiveness of the process of developing students' research culture in higher education institutions is determined by the degree of its interaction with all components of the educational process and its organisation as a system with objectives, results and the logic of specific progress over time, i.e. a teacher should pay attention to the development of students' research culture regularly and continuously, as it is not a chaotic process;
- it is not appropriate to divide students' research activities in didactic training into educational (conducted in accordance with the university curriculum) and creative (which are not provided for in the curriculum) activities. There is a place for creativity within any higher education institution's class, whether it is a lecture, seminar or practical session.

Conclusions

The present study was set out to explore the concept of “research culture” concerning pedagogical students, as well as to establish the foundational requirements promoting the development of a research culture. The necessity for such an exploration is underlined by today’s society’s call for educators and learners who can adapt quickly and flexibly, signifying a need to evolve the educational paradigm from fixed adaptive-disciplinary models to more scalable and personalised learning.

Utilising an integrative philosophical-systemic approach, which acknowledges the universal linkage of phenomena and seeks integral attributes of the phenomena under examination, this study characterised the criteria and conditions for cultivating a research culture among future teachers-educators in higher education institutions. A structural and content model to foster a research culture amongst higher education students was also developed, grounded on the discerned traits and patterns.

Significant findings include key notions and practical suggestions for developing a research culture among prospective educators. The model, created through this research, can be directly applied in the training of pedagogical specialities, highlighting the study’s practical significance. In essence, this research not only contributes to the conceptual understanding of research culture in the context of pedagogical specialities but also provides a functional model that can guide higher education institutions in fostering such a culture among their students. This study, therefore, lays the groundwork for shaping the research culture of future teachers-educators, a fundamental step towards producing adaptable and dynamic educators for the society of today and tomorrow.

References

- Abdumuminova, O. A. (2020). Formation of research competence in future teachers. The principle of scientific character in pedagogical education is a condition for the formation of a modern specialist. *Young Scientist*, 20(310), 543-545.
- Adsuar, J. C., Fernández-Guerrero, M., Ferrera-Granados, C., García-Gordillo, M. Á., Manzano-Redondo, F., Polero, P. & Rojo-Ramos, J. (2020). A descriptive study on the training and attitude of future teachers towards educational inclusion. *Sustainability*, 12(19), 1-14.
- Ahmad, S. & Iqbal, M. Z. (2023). Evolution of research culture in Pakistan. *Shaheed Benazir Bhutto Women University Journal*. Retrieved from <http://sbbwu.edu.pk/journal/current/10.%20Evolution%20of%20Research%20Culture%20in%20Pakistan.pdf>
- Aidoun, A., Alaoui, M., Boubih, S., Idrissi, R. J. & Rhomari, D. (2020). The use of the flipped classroom in the training of future teachers in svt. *Journal of Advanced Research in Dynamical and Control Systems*, 12(1 Special Issue), 80-87.
- Baikushikova, G. (2019). New attraction-centres of educational migration in Eurasia. In: *Cross-Border Exchanges: Eurasian perspectives on logistics and diplomacy* (pp. 217-226). Peter Lang Verlag.
- Baikushikova, G. (2021). The influence of a modern European higher education on the youth of Central Asia: Expectations and reality. In: *Evolving regional values and mobilities in global*

- contexts: *The emergence of new (Eur-)Asian regions and dialogues with Europe* (pp. 205-213). Peter Lang Verlag.
- Balazhanova, K., Gulmira, T., Kurmankulov, A., Menlibekova, G., Ybray, S. & Zhumankulova, E. (2020). The model of the formation of professional training of future social pedagogy teachers in the conditions of the university. *Journal of Intellectual Disability – Diagnosis and Treatment*, 8(3), 567-572.
- Baraniewicz, D. & Jonak, P. G. (2018). Combining theory and practice in the professional preparation of future special educators – the perspective of students. *Pedagogika*, 129(1), 33-52.
- Batugal, M. L. C. & Tindowen, D. J. C. (2019). Influence of organizational culture on teachers' organizational commitment and job satisfaction: The case of catholic higher education institutions in the philippines. *Universal Journal of Educational Research*, 7(11), 2432-2443.
- Bereka, V. Ye. (2008). *Professional training of master's in education management: theory and methodology*. KhGPA.
- Bírová, J., Chen, F., Gorbunova, N. V. & Masalimova, A. R. (2017). Formation of ICT-competence of future university school teachers. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(8), 4765-4777. <https://doi.org/10.12973/eurasia.2017.00963a>
- Bravena, N. & Stara, J. (2018). The themes of global development as a challenge for contemporary education in the reflection of future teachers. *Communications – Scientific Letters of the University of Zilina*, 20(1PartA), 101-108.
- Chang Rundgren, S. & Spiteri, M. (2020). Literature review on the factors affecting primary teachers' use of digital technology. *Technology, Knowledge and Learning*, 25(1), 115-128. <https://doi.org/10.1007/s10758-018-9376-x>
- Davidson, S. G. & Hughes, R. (2018). Communities of practice as a framework to explain teachers' experiences within the community of science. *Journal of Research in Science Teaching*, 55(9), 1287-1312. <https://doi.org/10.1002/tea.21452>
- Du, X., Duan, X. & Yu, K. (2018). School culture and school effectiveness: The mediating effect of teachers' job satisfaction. *International Journal of Learning, Teaching and Educational Research*, 17(5), 15-25.
- Failasofah, F., Mukminin, A., Masbirorotni, M., Abrar, M., Fajaryani, N., Fortunasari, F., Hidayat, M. & Habibi, A. (2022). Cultura, lengua y educación multilingüe: actitudes de los profesores de lengua extranjera hacia la política multilingüe en Indonesia. *Bordón. Revista de Pedagogía*, 74(3), 121-137. <https://doi.org/10.13042/Bordon.2022.90900>
- Gorbunova, N. A., Sarsekeyeva, N. Y., Sarsekeyeva, Z. Y. & Zhekibayeva, B. A. (2019). Developing students' cognitive culture through solving career-oriented tasks within the framework of initial teacher education. *Science for Education Today*, 9(4), 7-18.
- Gorkunenko, P. P. (2007). *Preparation of students of pedagogical college for research work*. Vinnitsia Mykhailo Kotsiubynskyi State Pedagogical University.
- Huz, V. V., Kirsanova, S. S., Melash, V. D., Molodychenko, V. V. & Varenychenko, A. B. (2020). Modernization of education programs and formation of digital competences of future primary school teachers. *International Journal of Higher Education*, 9(7), 377-386. <https://doi.org/10.5430/ijhe.v9n7p377>
- Johnson, D., Lee, A. & Green, B. (2022). The doctoral experience in science: Challenging the current orthodoxy. *British Educational Research Journal*, 38(5), 761-779. <https://doi.org/10.1080/01411926.2010.515048>
- Kisiołek, A., Karyy, O. & Kulyniak, I. (2022). The Concept of a Digital Marketing Communication Model for Higher Education Institutions. *Lecture Notes in Networks and Systems*, 458, 75-89.

- Kisiołek, A., Karyy, O. & Halkiv, L. (2021). Social media in marketing management of higher education institutions in the context of Poland and Ukraine. *Polish Journal of Management Studies*, 24(1), 164-182. <https://doi.org/10.17512/pjms.2021.24.1.10>
- Labajos, F. A. N., Landeo, I. M., Mendoza, I. M. C., Orbegoso, C. O. V. & Zafra, D. F. (2020). Analysis of research culture and scientific production in a national university. *International Journal of Scientific and Technology Research*, 9(2), 705-709.
- Lasić-Lazić, J., Pavlina, K. & Pongrac Pavlina, A. (2018). Digital competence of future teachers. *5th European Conference on Information Literacy in the Workplace*, 810, 340-347.
- Lucey, T. (2023). *Management and internationalization of research strategies in higher education institutions as a basis of economic well-being*. Virtus Interpress. Retrieved from <https://virtusinterpress.org/Management-and-internationalization-of-research-strategies-in-higher-education-institutions-as-a-basis-of-economic-well-being.html>
- Maltabarova, N. A., Kokoshko, A. I., Abduldaldayeva, A. A., Shanazarov, N. A. & Smailova, G. T. (2019). Innovation technologies in student's independent activity and creativity development: The case of medical education. *International Journal of Emerging Technologies in Learning*, 14(11). <https://doi.org/10.3991/ijet.v14i11.10341>
- Molyako, V. A. (2003). Problems of the psychology of creativity and the development of an approach to the study of giftedness. *Questions of Psychology*, 6, 117-125.
- Mynbayeva, B. N., Yerubayeva, G. K., Amirasheva, B. K., Zakirova, D. I. & Mukhtarova, S. O. (2018). A biology learning through the instrumentality of the "flipped classroom" method with particular reference to pedagogical university in Kazakhstan. *International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM*, 18(5.4), 3-10.
- Myrzabayev, A. B., Shayakhmetova, M. N., Shaushekova, B. K., Yerkin, A. S. & Zhekibayeva, B. A. (2018). Genesis of the concept noosphere pedagogy and the paradigm. *Astra Salvensis*, 6(1), 547-563.
- Nestulya, S. & Shara, S. (2023). Distance learning as a relevant educational technology in higher education institutions. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 9(1), 39-46. <https://doi.org/10.52534/msu-pp1.2023.39>
- Oliiar, M., Slyvka, L. & Tyagur, R. (2020). Monitoring of training of future teachers of health care activities in school. *Journal of Physical Education and Sport*, 20(2), 822-828. <https://doi.org/10.7752/jpes.2020.02117>
- Parfyonova, E. Y. U., Shaizadanova, G. S. & Abilkalamova, K. K. (2017). Modern trends in pedagogics on introducing information technologies in the student training process. *Izvestiya Vysshikh Uchebnykh Zavedenii, Seriya Tekhnologiya Tekstil'noi Promyshlennosti*, 371(5), 289-292.
- Perines, H. A. (2020). Training in educational research for future professors. [La formación en investigación educativa de los futuros profesores]. *Formacion Universitaria*, 13(4), 139-152.
- Rodrigues, U. M., Nygaard, C. & Rumbley, L. E. (2023). Researching academic outcomes of internationalization at universities: Lessons from the past and recommendations for the future. *Journal of Studies in International Education*, 27(2), 123-147. <https://doi.org/10.1080/14703297.2023.2209064>
- Silva, M. & Fernandes, P. (2021). The integration of research into teaching in Portuguese higher education: practices and perceptions in different academic domains. *Higher Education Research & Development*, 40(3), 531-545. <https://doi.org/10.1080/07294360.2021.1878382>
- Smith, H. & Wilson, M. A. (2023). The role of higher education institutions in promoting a research culture. *Higher Education Research & Development*, 42(2), 391-406. <https://doi.org/10.1080/02188791.2021.1911785>

- Soto, M. & Paredes, M. (2022). Research culture in higher education: The role of the institutional context. *European Journal of Higher Education*, 44(1), 77-93. https://doi.org/10.1386/eta.12.3.257_1
- Stukalenko, N. M., Zhakhina, B. B., Abuyev, K. K., Seitkasymov, A. A. & Utegenov, M. Z. (2016). Critical thinking development in students during college education process. *Global Media Journal*, 2016, 1-8.
- Tan, M. & Chang, J. (2023). Developing a research culture in higher education institutions in Asia: The human resource factor. *Journal of Institutional Research South East Asia*, 20(2), 11-25. Retrieved from http://www.seaairweb.info/journal/articles/JIRSEA_v20_n02/JIRSEA_v20_n02_Article11.pdf
- Zhang, W. & Wang, Y. (2021). Challenges of building research cultures in universities: A study of the perceptions of academic staff. *Journal of Higher Education Policy and Management*, 43(3), 266-280. <https://doi.org/10.1080/1360080X.2021.1878382>
- Žibėnienė, G. & Barkauskaitė, M. (2018). The reflection experience of future teachers as professional improvement tool. *Pedagogika*, 130(2), 64-75. <https://doi.org/10.15823/p.2018.22>

Resumen

Bases para conformar la cultura investigativa de los futuros docentes-educadores en las instituciones de educación superior

INTRODUCCIÓN. La sociedad actual necesita personalidades que, tanto en su papel de educadores como de aprendices, sean capaces de realizar cambios rápidos y flexibles en su estilo de vida. Esto requiere un replanteamiento del paradigma educativo, moviéndose más allá de los modelos de aprendizaje adaptativos-disciplinarios establecidos, en favor de un aprendizaje escalable y personalizado. El propósito de este estudio fue investigar el concepto de “cultura de investigación” en relación con los estudiantes de especialidades pedagógicas y formular requisitos básicos que fomenten el desarrollo de una cultura de investigación. **MÉTODO.** El estudio se basó en un enfoque filosófico-sistémico integrador, que considera la conexión universal de los fenómenos y la búsqueda de características integrales de los fenómenos en estudio. **RESULTADOS.** Durante el estudio se caracterizaron los criterios y condiciones para la formación de una cultura de investigación entre los futuros docentes y educadores en instituciones de educación superior. El estudio también condujo al desarrollo de un modelo estructural y de contenido para configurar la cultura de investigación de los estudiantes de educación superior, basado en las características y regularidades identificadas. Además, se formularon ideas clave y recomendaciones para el desarrollo de una cultura de investigación entre los futuros educadores. **DISCUSIÓN.** El significado práctico del estudio es determinado por el hecho de que el modelo desarrollado para la formación de una cultura de investigación puede ser aplicada durante la formación de especialidades pedagógicas.

Palabras clave: Programa educativo, Docente-investigador moderno, Habilidades investigativas, Futuro docente-investigador.

Résumé

Fondements pour façonner la culture de recherche des futurs enseignants-formateurs des Établissements d'enseignement supérieur

INTRODUCTION. La société d'aujourd'hui a besoin de personnalités, à la fois en tant qu'éducateurs et en tant qu'apprenants, capables de changer rapidement et de manière flexible leur mode de vie. Or, cette société nécessite de repenser le paradigme éducatif en s'éloignant des modèles d'apprentissage adaptatifs et disciplinaires établis au profit d'un apprentissage évolutif et personnalisé. Le but de l'étude était d'étudier le concept de « culture de recherche » par rapport aux étudiants des spécialités pédagogiques et de formuler un socle commun contribuant au développement d'une culture de recherche. **MÉTHODO.** La méthodologie choisie est celle de l'approche philosophico-systémique générale intégrative, qui repose sur la disposition de la connexion universelle des phénomènes et sur la recherche des caractéristiques intégrales des phénomènes étudiés. **RÉSULTATS.** Les critères et les conditions de formation d'une culture de recherche parmi les futurs enseignants-formateurs des établissements d'enseignement supérieur sont identifiés. L'étude a également abouti au développement d'un modèle structurel et de contenu permettant de façonner la culture de recherche des étudiants de l'enseignement supérieur sur la base des caractéristiques et régularités bien identifiées. En outre, des idées et des recommandations clés pour développer une culture de recherche parmi les futurs enseignants sont formulées. **DISCUSSION.** L'importance pratique de l'étude est déterminée par le fait que le modèle développé pour façonner une culture de recherche peut être appliqué lors de la formation dans les différentes spécialités pédagogiques.

Mots-clés : *Programme éducatif, Enseignant-chercheur moderne, Compétences en recherche, Futur enseignant-chercheur.*

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