Master Students’ Research Culture Development in Pedagogical Education

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Abstract. One of the principles of the Bologna process is lifelong education, which means that a person should not be able just to gain knowledge for life, studying at the walls of his alma mater, but to master the competencies of self-education and research which enables him to be in a constant process of self-instruction. This is closely linked to the requirements to the Master in Education: who must be able to obtain information, to be able to analyze it, draw conclusions, put properly theory into practice, be able to see the contradictions, to pose problems, be able to seek the best ways and offer effective solutions (Всемирная хартия университетов (1988), Государственный общеобразовательный стандарт образования Республики Казахстан, 2009)). For the successful implementation of the lifelong learning principle and meeting Master of Education training requirements master student’s research culture should be developed. Having acquired the main basis of research culture, students will be able to use it to solve the problems of self-education, thereby self perfecting throughout their lives. The background, definition and conditions of the master students’ research culture development are discussed in the given article.

Keywords: master student, research, research culture, lifelong education, continuing teacher education.

Introduction

Currently, the State program of education development in the Republic of Kazakhstan to 2011–2020 years is being realized, the goal of which is radical modernization of
the education system, a significant and sustained increase in investment in education, improvement the quality and access to the European level. The Republic of Kazakhstan is the first Central Asian state that is honored to join the Bologna Declaration and become a member of the European educational space (Сарсембәева, 1992). The ultimate goal of the changes can be considered to create a model of education that is focused on the development of student’s personality, his creativity, independence, initiative, desire for self-organization and self-determination.

According to the World Charter of Universities (Bologna, 1988), the learning process in universities must be inseparable from the research activities in order to meet the changing needs of the teaching community and with the level of development of scientific knowledge. Students’ research culture must be actively developed in order to ensure this principle. The document also states: “Rejecting intolerance and being constantly open to dialogue, the university is an ideal meeting place for teachers with the ability to transfer knowledge and willing to deepen them through the research and students who have the right, the ability and desire to enrich themselves with this knowledge”, this means that education should be realized through research that is directly connected with the development of research culture.

The object of the study is master students’ research culture development in pedagogical education.

The aim is to study master students’ research culture development in pedagogical education.

To achieve the aim the following objectives were considered:

• To identify the prerequisites for the development of research culture: analysis;
• To identify the definition of a master student’s research culture of pedagogical education, consideration of different Kazakhstani and foreign scientists’ definitions of research culture and on this basis the authors formulated their own variant of the term: analysis, classification, induction;
• To identify conditions of master student’s research culture development in a continuous pedagogical education: the study of literature, documents and results of teaching activity.

Methodology

This article uses the following theoretical methods: induction, analysis, classification. Using the method of induction and analysis the definition of master student’s research culture in pedagogical education was formulated. The classification method helped to organize the definitions of research culture data of Kazakhstani and foreign scientists. The study of literature, documents and results of educational activities revealed the prerequisites and conditions for the development of master student’s research culture in continuous pedagogical education.
The degree to which the topic in focus has been investigated
Teacher’s research culture in pedagogical literature was studied by Kazakhstani and foreign scientists in the following aspects:


Discussion of the data and results

**Prerequisites of research culture development at University**

Changes in the socio-economic and political spheres of life in contemporary society, changing the terms of its cultural development influenced the domestic educational system. The current stage of development is characterized by a focus on entry into the world educational space and, as a consequence, the educational paradigm shift (Мазилов, 1998). The transition to a new paradigm of personal-centered the trend of modern education and pedagogical consciousness of society in the late twentieth century. There is every reason to believe that the knowledge-educational paradigm that prevailed in education for many centuries has exhausted its possibilities. First, the amount of knowledge even for the general orientation is almost incomprehensible. Secondly, it became clear that the function of education is not limited to the saturation person with knowledge. Life experience has repeatedly demonstrated convincingly that the breadth and encyclopedic knowledge get along with not fully educated people in the actual human aspect. A paradigm shift in this case acts as a natural climbing to a more holistic understanding of the phenomenon of education, the structure of which is now necessary to enter not only the “knowledge”, activity and creative experience, but person’s spiritual-personal experience of self-organization associated with the performance of meaning searching, reflexive, self-assessment, life-planning and other functions. The system of pedagogical ideas, principles and technologies that should be considered as a special sphere of educational activity, and forms the concept of student-centered learning (Сластенин, 1993). However, the combination of conservatism and inertia, often encountered in the practice of modern schools, the minimum educational system makes changing the gap between the said purpose and results. Specifically, it is expressed in the fact that society at the completion of education gets people whose training does not meet the new requirements. This causes a claim to the teachers. This situation suggests a contradiction between the traditional level of teacher’s activity realization and modern demands of school and so-
ciety in educators with creative, scientific and pedagogical thinking. Formation of the Master, corresponding to modern requirements, starts from the student teachers college, teacher high school. A graduate of the latter should be a researcher, a designer, a developer of new technology education. Since the acquisition of research skills, the ability of scientific approach to solve problems of teaching is one of the key conditions that ensure professional development of future professionals. Master of pedagogical education must be able to: predict and project development of pupils’ personal qualities in accordance with the periods of the educational process, be prepared for an innovative search for new forms and methods of work, corresponding to emerging educational problems, plan and implement a solution of pedagogical problems in a holistic pedagogical process. The most significant is that each master student of pedagogical education must be an analyst, a researcher, has a desire for continuous improvement, that is to be ready to transition from the conditions of “variably–activity” in terms of “reflexive” process in pedagogical higher education institutions (hereinafter – the University). On this basis, the master student’s research culture in the university may be considered as one of the basic conditions for ensuring the continuity of continuous pedagogical education. It should be noted that the problem of master’s research culture of psychological-pedagogical specialties in lifelong learning as one of the aspects of the training of future scientists is still not covered in the scientific and methodological literature. The focus of recent publications is given to research activities in educational institutions, the forms and methods of the research activities of university students, methodological problems of educational research, considered in connection with other forms of professional training of future specialists. Thus, the relevance of this problem is its lack of elaboration in teaching science.

There is a concern about a research culture because:

- Research is the basis of how a university education works;
- It is the intellectual life blood of teaching staff;
- It should be the fundamental support of teaching;
- It is a basis of our support for our community.

Edgar Schein in his work “Organizational culture and leadership”: Research culture is the set of shared, taken-for-granted implicit assumptions that members of a HEI hold about research and determines how they perceive, think about, and behave with the respect to research activities. The OECD definition (OECD, 2002) “Research and experimental development comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. The emphasis is given to creative work, systematic, increase the stock of knowledge. The DEST definition is a little more specific to satisfy their own agenda, which is still valid: “The essential characteristic of research activity is that it leads to publicly verifiable outcomes which are open to peer appraisal. Research and experimental development comprises: creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge
of humanity, culture and society, and the use of this stock of knowledge to devise new applications, any activity classified as research and experimental development is characterized by originality; it should have investigation as a primary objective and should have the potential to produce results that are sufficiently general for humanity’s stock of knowledge (theoretical and / or practical) to be recognizably increased. Most higher education research work would qualify as research and experimental development.

Category “research culture” belongs to the fundamental categories of pedagogy. According to degree of importance it is located next to such categories of teaching as “educational and learning process”, “culture of learning”, “information culture”. From the perspective of a systematic approach to the structure of the research culture there are two subsystems: the “research” and “culture”. In the first subsystem can be identified inherent psychological and educational quintessence. The etymological analysis of the definition of “research” mean representing according to circumstantial evidences initially given by the nature the order in specific objects and phenomena of surrounding reality. In the ontological aspect of the “research” is defined as the process of developing new knowledge, a kind of cognitive activity. Comprehension of the meaning, the truth of “what is” – namely, the research is directed. Summing up the analysis of the first subsystem, we note that the study is a holistic way of understanding of reality, the product of which is embodied in the meaning of the objects and the validity of knowledge about them. The second system is the category of “culture”. Its semantic quintessence is more consistent with the subject area “Philosophy of Culture”. Indeed, without penetrating of all spheres of human life is a reasonable investigation is impossible to develop any culture or civilization. Semantic bridge connecting the category of “research” and “culture” appears philosophical category of “truth”. First, the truth is the product of research, and secondly – one of the highest values of culture, along with the Good, Beauty and Faith (Петрова, 2008).

Modern psychological and educational research suggests the following interpretations of research culture. According I. V. Nosaev, research culture is an education complex dynamic that characterizes a person’s ability to solve important problems of the methods of scientific knowledge. According to the E. D. Andreeva, research culture – a set of ways of development of information reality, utilized by man at some stage of their development. J. F. Isaev treats research culture as the quality of a person characterized by the unity of a coherent picture of the world of knowledge, skills and abilities of scientific knowledge, valuable relation to its results, as well as providing its creative self-development and self-determination. According to S. T. Taubaeva research culture means ensuring relevant to each stage of the development of education’ needs and mechanisms of social inheritance “of innovation – the didactic activities, transfer of cultural tradition. As a systemic whole, it bears the mark, as a cultural tradition, and cultural genetic subject of mutual complementarity reflects the aspects of objectification. As a more general category than progressive teaching experience and creativity, research culture absorbs them to their
The research culture of the teacher is seen as a necessary quality for the development, transfer, creation of pedagogical values and educational technologies as a professional and meaningful quality of the teacher’s personality, which allows to understand and perceive the educational facts, phenomena,
processes, results, interpret laws and theories, and formulate hypothesis and on this basis to recreate its own system of innovation – the didactic activities, like the ability to purposefully formed in cooperation with the developing reality. Teacher's research culture is based on the culture of the research works of the scientist, requiring orientation paradigm and the paradigm of science education” (Таубаева, 2001). According to E. V. Makagon, the research culture of the teacher reflects his ability and need to conduct scientific-search work, to use methodology and methods of pedagogical research, be able to look for contradictions in the existing educational processes and to consider a new theoretical and methodological positions, perfectly navigate the vast the world of scientific literature, analyzing, summarizing and classifying the collected material (Макагон, 2011). According to N. Petrova research culture of the individual – is an integrative and dynamic quality of a person characterized by valuable attitude to research, insatiable need for search activity, a set of methodological, philosophical, reflexive knowledge and research skills, high-potential research capacity (Петрова, 2007).

In many Universities of European countries requirements for general and professional competencies of a Master consists of the following: to be an erudite in the major fields of knowledge; have a fundamental scientific basis; own methodology of scientific research; own philosophical questions of science; be prepared for independent research and teaching activities; be able to explore and analyze socially significant problems and processes; own culture of logical thinking; on a scientific basis to be able to organize their activities; be able to form the basis of a methodology, set goals and objectives related to the implementation of professional functions; acquire new knowledge, using modern international information technology education; understand the nature and the social significance of the master (Tempus Tacis Project, 2002).

So what then is a research culture?

• Research is a learned behavior; it is started these days in secondary school and is enhanced as we progress through our degrees and careers;
• The research culture is the structure that gives that behavior significance and that allows us to understand and evaluate the research activity;
• In a university then, the culture is that structure, the cultural structure based around the behavior of the staff and students that allow us to transfer the knowledge gained through this systematic process to our students and to the community;
• We pass on this and other knowledge to our students in the context of today, not yesterday, but today, along with the ability to analyze the evidence in the context of tomorrow;
• That structure is the cultural context that we must strive to build on – the continuous development. We cannot afford to stop researching, learning or we run the risk that our teaching will decrease, gradually, almost imperceptibly but inexorably in its relevance to tomorrow.
Drawing on a variety of psychological and pedagogical formulations of the discussed definition, we propose the following definition of master student’s research culture – a set of methodological knowledge, reflexive competency and research skills, the quality of the personality of a modern teacher, characterizing him as a professional, having the research attitude to the subject of education.

**Experience of leading countries in developing research culture**

Constant exposure of master students to research is one of the effective ways of research culture development in many leading Universities of Europe.

In Finland, it is an accepted principle that teacher education must equip teachers with research-based knowledge and with skills and methods for developing teaching and learning. The goal of the research-based approach as a main guideline is to develop teachers who have the capacity to use research and research-derived competencies in their ongoing teaching and decision-making. The teachers need to be familiar with the latest research on how something can be taught and learnt. In addition, teachers need knowledge about the most recent advances of research in the subjects they teach. The combination of pedagogical content knowledge and subject content knowledge is considered to provide the foundation for developing teaching methods that can be adapted to suit different learners. The aim is to develop autonomous teachers who will base their pedagogical decisions on formal, systematic arguments and experiential arguments (Marja-Terttu Tryggvason, 2006). In order to develop research-based thinking, a continuous interaction of research and practice is the pattern from the very beginning of the programme. The idea of a spiral curriculum is applied—with the core courses vertically integrated, and research methods courses integrated with other courses at every point in the programme. Thus research, theory, and practice are fused—with the idea of research-based thinking as the connecting glue. The final goal is the writing of the master’s thesis, but several minor formal research papers are required throughout the programme (*Scandinavian Journal of Educational Research*, 2005).

In many universities of Germany the formation of knowledge is carried out through research, which results in developing research culture. They actively replicate the results of their research. Moreover, there is carried out the involvement of international scientists in the research program (*The bridge project*, 2005).

The development of research culture in leading European Universities is carried out through the integration of research and education in pedagogical process.

**Conditions of research culture development**

*Exposure to the Rules of Rational-empirical Work*

According to Doyle (1990), exposure to research, investigation and assessment plays a role in forming the qualified teacher. The research process develops the students’ intellect mechanisms of internal criticism, and professional autonomy (Doyle, 1990). Professional
decision-making based on empirical examination and rational analysis should be part of the model of routine educational work that the college presents to its education students. Consequently, they gain from being exposed to it in the course of their studies (Shamai, Gafni, 1997).

Shmuel Shamai, Drora Kfir (2002) discerned preconditions for conducting research activity in colleges:

Long-term planning for the college. The college should have a long-term vision of the system’s development in future years. Most colleges engage in medium- and long term planning. To devote human and organizational resources to the development of research, the college has to free itself, at least to some extent, from day-to-day, short-term struggles for existence. Colleges struggling for survival have difficulty doing this.

Administrative initiative for the introduction of research. The administration’s attitude toward research is a significant factor. Some directors regard research as a stimulus for the development of the college and perceive the research culture as a vital part of the college culture. Some directors fund research, but do not see it as a substantial tool for the college’s advancement; instead, they use it more as a public relations device to glorify the college’s reputation. In some colleges the administration takes no initiative to promote research activity and does not make the necessary resources available despite the presence of personnel who are interested in doing research.

The stage in the academization process. As expected, there is a large gap between the academic and the not-yet-academic colleges in terms of the scope and quality of research and, among the academic colleges, between those that obtained accreditation at different times. This disparity creates a vicious circle: it is both a result of the situation and a factor in the perpetuation of the situation. Progress on the academisation track is related to the development of research.

College size. The large colleges, with their bigger staffs and larger budgets, have an advantage. They are more likely to have staff members who pursue research, and they have greater budgetary flexibility when they want to take advantage of it for the sake of research. Large colleges also have more tracks, centers, and units, which makes the formation of research units or research groups possible.

Personal stature of the principal researcher and stature of the research unit/committee. The stature of the heads of the research units and research committees affects the stature of the committee/unit. When the principal researcher is highly respected by the administration and staff, the value of research is more likely to increase and a research culture is more likely to become part of the college culture. Several colleges employ outside consultants, usually from a university, to be in charge of their research activity. The advantage is that the consultant has prestige and research experience, but the drawback is that this work is in addition to a full-time job at the university. Employing an outside consultant is not necessarily in the best interests of research activity in the college itself.
Obstacles of research culture development

The ‘college culture’ in the teachers’ colleges is primarily one of teaching. To improve the colleges’ academic work, broaden what they offer students (fields of study and degrees), and enhance their ability to recruit good students, the college culture would do well to include a ‘research culture’. For this to occur, several obstacles need to be overcome.

Budgetary difficulties. To encourage more people to engage in research systematically and comprehensively, a budget has to be obtained and made available to the teachers and students, some teaching hours should be converted into research hours.

Lack of expertise. There is a shortage of expert researchers who could assume responsibility for research studies and design, and could establish a research culture in the colleges. Although the process of becoming more academic, like the new promotion criteria, encourages teachers to engage in research, the budgetary constraints and other factors hamper the recruitment of researchers, and retraining of teachers and teacher-researchers. There is a need to invest in finding ways to use the existing researchers efficiently and to increase the number of active researchers (Shamai, Kfir, 2002).

Discussion

Development of master student’s research culture in pedagogical education is a complex process that involves the development of all its components:

- Methodological knowledge – knowledge of the system about the basis and structure of educational theory, the principles of the approach and the methods of obtaining knowledge (Krajewski, 1994);
- Reflexive competence – integrative quality of a future educator, which has a complex system of organization and acting as a collection, interaction and mutual cooperation of intelligent, communicative and personal components, which reflects the degree of formation of student’s willingness to implement effectively educational activities;
- Research capacity is the individual psychological characteristics of a personality, ensuring the success of the originality and quality of the search process, the acquisition and interpretation of new information. The core of research skills is search activity (Egorova, 2006);

University must overcome a number of difficulties for the successful research culture development. It is an issue of current importance to solve such problems as the formation of the budget to carry out the research work by students and teachers. Since any scientific study requires financial costs and time, which also in turn should be funded. Another problem is the use of experts for guidance and counseling of students. It is well known that without qualified and experienced instructors’ research process cannot be realized. Conditions of master student’s research culture development in pedagogical education is a specially – organized process of education, including academic work with the adoption of business solutions based on empirical testing and rational analysis. Lessons should
include competence-‐ oriented tasks and project works which contribute to the master
student’s research culture development in pedagogical education.

Through the entire holistic educational process research work should be ensured,
which will stimulate students’ search activity of mastering the methodological knowledge
and reflexive competencies, thereby developing their research culture in pedagogical
education.

**Conclusion**

Research culture development is one of the issues of current importance, as it is
closely connected with need to prepare specialists for lifelong learning which is one of
the principles of Bologna process. To achieve this aim the definition, prerequisites and
conditions of master student’s research culture development were considered.

The prerequisite of master student’s research culture development is a shift of educa-
tional paradigm: from knowledge-‐centered to person-‐centered paradigm of education,
according to which the attention is paid to personality development. Research culture
development contributes to master student’s personality development and satisfies the
demand of society in teachers with creative, research and pedagogical thinking. As mas-
tering research abilities and habits, an ability solve the pedagogical problem with research
method is one of the key conditions of ensuring the professional specialists’ development.

The conditions of master student’s research culture development are: long term University planning, administrative initiative for the introduction of research, the stage in
the academization process, college size, personal stature of the principal researcher and
stature of the research unit / committee.

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Edukologijos magistrantų tiriamosios veiklos kultūros plėtra

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Santrauka


Straipsnyje nagrinėjamos edukologijos studijų srities magistrantų tiriamosios veiklos veiklos kultūros formavimą lemiančios prielaidos.


Kazachstano ir Europos mokslininkų tyrimų pagrindu nagrinėta magistrantų tiriamosios veiklos kultūros samprata. Prieita prie išvados, kad metodologinių žinių ir refleksyvaus mokymosi, tariamųjų gebėjimų visuma, kartu su asmenybės įvairios šiuolaikinio mokymo bruožais charakterizuojai jį kaip aukštos tiriamosios veiklos kultūros profesionalą. Toks pedagogas nuolat siekia ugdymo kokybės.

Magistrantų tiriamosios veiklos kultūros raidą veikia aukštų mokymo kontekstas, ilgalaikis planavimas, mokslinių tyrimų palaikymas administracinėmis priemonėmis, akademinių padalinio statusas, asmeninis mokslinis vaidmuo pavyzdys.

Esminiai žodžiai: magistrantas, tiriamosios veiklos kultūra, tyrimas, nuolatinis mokymasis, formavimosi sąlygos, tęstinis profesinis švietimas.