Upgrading Educational Quality through Synergy of Teaching and Research

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ABSTRACT

This paper is a part of an ongoing attempt to reflect on the ways and results related to developing research competence, which is considered as an urgent issue for contemporary higher education in Russia. The polypragmatic approach, the major approach used to study the issue, is an integrity of dialectic, exploratory, synergetic and competence approaches that ensures success and effectiveness in developing student research competence. The new approach in considering the competence paradigm in teaching Humanities is associated with predomination of the synergetic principles aimed at developing their intellectual level, high-tech skills, and skills useful in making appropriate decisions in situations requiring high level of a person's inner organization, deep understanding of concepts, and ability to convert the knowledge into competencies. The authors try to prove that to effectively apply the best practice, humanitarians, as professionals, must understand the basis and synergy of research. In this regard, research skills have been looked upon as a part of a curriculum redevelopment process that still needs enhancement. The authors consider Humanities student attitudes towards research with regard to their ability to use theoretical and methodological basis needed to form their research competence, and come to a conclusion that the approach implemented have improved student self-perceived competence in conducting a research project. They also share their opinions and findings on the structure and synergy of developing self-efficacy in self-organization and self-transformation when carrying out a research project. The information and findings may be useful for practitioners in humanitarian higher education institutions, as well as for further development and contribution into the process of upgrading the system of higher education in Russia.

Keywords: Research Competence, Synergetic Approach, Interdisciplinary Approach, Self-Organization, Self-Transformation, Innovation, Teaching Humanities
JEL Classifications: A23, I23, I26

1. INTRODUCTION

Currently, there is a growing trend in higher education of Russia to offer competency-based programs. The urgency of this issue for humanities majors is closely associated with its significance for market demands, i.e., demands resulting from peculiarities of the Russian economic system and its prospects. The objective of the programs is to promote "competence sets," or "competence packages," developed for rapidly changing labor market needs. The list of the best competences obligatory for further success in one's career includes, first and foremost, the research competency implying critical and creative thinking, ability to appraise community and job conditions, sort out creatively the possible ways to solve the challenges, use advanced technologies and generate brilliant ideas, be an expert in obtaining and using new information, systemize it and be able to develop a hypothesis (Gutman et al., 2014; Ivanov et al., 2015; Shaidullina et al., 2015). These competences also require such abilities as generalization, matching similar and alternative solution variants, formulating fair conclusions, and using the outcomes in person's further experience (Vedishenkova et al., 2015; Yarullin et al., 2015).

Humanities faculties at universities consider the skill and ability of an undergraduate to convert his theoretical knowledge into research procedure as an important tool for developing a research competence. The top educational experts (Budanov, 2013; Slastenin et al., 2003) engaged in developing innovative approaches for humanities students subscribe to the current popular opinion that the major task currently is to create a scientifically valid approach for converting theoretical knowledge into research competence. It is the synergistic approach with its cross-disciplinary techniques that created the conditions for transforming certain course or science knowledge to research competence structures (Budanov, 2013; Vinenko, 2001; Vyugina, 2015; Gromova and Alimbekov, 2015).

It has been proved that innovations regarding aims, content and outcomes outpaced the whole process of educational redevelopment, and support the significance of synergy as a continuous improvement process.

The theory and methods applies in the investigation involves treatises of a number of Russian experts in philosophy of research, methodological framework, the concept of self-organization in pedagogics, current competences approaches and those devoted to construction of professional identity.

The theoretical background may be described by such key concepts as learning and training, humanities, competence, research competence, synergetic approach, self-organization, self-transformation, modeling, and innovation. It also involves the synergetic approach as educational conditions to form student general research skills while studying humanities based on synergetic approach principles.

2. METHODOLOGICAL FRAMEWORK

Synergistic regulation in developing high school student research competence is associated with the following principles:
- Interdisciplinary, enabling teachers and students to make connections in their learning process through exploring clear and relevant links across the curriculum, using universal techniques of system analysis
- Self-organization, coordinated functioning of a person in the environment with direct communication and feedback (Zimnaya, 2006; Novikov, 2000)
- Self-transformation, a higher level of person's development determined by improvement and development of the systems capable of continuously gaining new knowledge, skills, or experience, from the previously obtained.

Effectiveness of synergy in the course of research competence development may be displayed with:
- Monitoring and measuring materials for synergy performance while developing research competences of humanities students, including matrix for interdisciplinary interaction of educational and teaching units, monitoring of research competence development, self-evaluation and evaluation by independent experts;
- Certain subject research competence, involves the ability

to apply knowledge in any changing conditions of social and professional practice, to make reasonable conclusions, to defend his or her position, to design personal, academic, cognitive and social and professional trajectory of activity, to formulate a research problem, to show a readiness and willingness to innovations, to formulate the problem, hypothesis, to predict research results, etc.).

Efficiency of implementing synergetic principles while developing high school student research competence may be measured by:
- Depth and sustainability of knowledge in social sciences, high level of interdisciplinary link displayed through students' readiness and willingness to perform interdisciplinary research projects, the level of personal active self-organizational skill.
- Development of research competence that meet the requirements of humanitarian education and high personal development, based on the content of humanities (philosophical, political, historical, psychological and pedagogical, literary, linguistic, legal, artistic, creative, etc.), their consistency, openness, non-linearity, high level of generalization, the focus on interdisciplinary communication, self-organization and self-transformation.
- Demands (in communication, cognition, understanding, self-organizing, self-transformation, interdisciplinary communication)
- Ability to produce, generate research ideas, implement non-standard ways, transfer research competence from on science to another in new and unusual cognitive, social, or professional situations, etc.
- System of values, covering common ideological, professional, engineering, inventive, creative ones, and norms, ideals, values, verbally expressed opinions of students, behavioral actions while making research projects.

Pedagogical conditions to develop student research competence are based on synergy principles of humanities:
- The conceptual synergy ideas are associated with the goal and objective structure of student research competence development, the basic concepts, predictive model for a specialist development based on new requirements for qualifications and competences, the algorithm to design a research competence package, redevelopment of syllabus and curriculum, synergy ideas in didactic content of Humanities, self-organization, reflecting and rethinking of educational technology.
- An algorithm for designing research competence as a sequential process of designing a research project involving determining relevant topic or theme of research, identifying possible variants of the problem occurring in the course of research, their formulation with the help of a teacher, appropriate brainstorming followed by a team discussion. The algorithm also covers such functions as distribution of research tasks for academic groups, discussion of research methods, information search, creative solutions, i.e., individual activities of participants in individual or group research tasks, intermediate discussion of the results obtained in the academic teams in various environment, protection of results, peer review, discussion of the comments and recommendations,

group discussion, expertize, external evaluation, design of predictive conclusions.

- Scientific and methodological support of the process covers three levels: Methodological (concepts of synergy approach), theoretical (principles of synergy approach as didactic categories in their specific forms, methods, training tools), and techniques (the integral structure and content of academic curriculum and teaching materials of traditional and synergy types, materials promoting effective implementation of the research competence objectives for the period of study, a series of classes, a certain class).

3. RESULTS AND DISCUSSIONS

3.1. Classification

Predominant features of the university student research competence developed in the course of sciences, or courses studied, interaction are the following: Learning and practical application motivation; acquiring necessary knowledge; the experience of application in typical and extreme situations; understanding the value of the application; emotional regulation of the process and outcomes. The distinguished features are of general character and may be found in any activity but for humanities they are considered as specific because of their close relation to the content of the material being studied and implementation of the principles of interdisciplinary relationship, self-organization and self-transformation. In this innovative process there are various skills to be applied: Axiological orientation, self-improvement, self-transformation, social interaction, communication, academic, transferring research outcomes into practice, IT, professional mobility, correction and qualitative. The investigation proved the suggestion that the characteristics of research competence may be grouped on the same basis as the content of education, i.e., the key characteristics (implemented on meta - disciplinary, universal, common for all sciences), interdisciplinary ones (implemented in the level of content, integrative for the set of sciences, or courses, in the curriculum), related only to certain subjects or courses (developed through certain subjects or sciences). The suggested differentiation determines the composition, structure and content of research competence which are characteristic to humanities. Thus, personal competencies include self-awareness, drive, relationship skills and confidence, which are good indicators of the possible future success. So as they are focused on the individual as a person, his activity and communication interrelate with competences of axiological orientation, civic position, skills and abilities that promote integration of all his knowledge, self-improvement, self-organization, self-development, and personal reflection.

The next group of communicative competences relates to human interaction in social sphere, i.e., person's social interaction and social mobility. The ability to communicate (oral, written) comprises the design and perception of the text, cross-cultural communication, business correspondence, business language, communicative tasks, interaction with others, etc.

The last group of personal activity competences includes the competence of the educational and cognitive activity (formulation and accomplishment of didactic tasks, non-standard solutions,

problem situations and challenges, productive and reproductive knowledge; creativity, intellectual activity); competence of operationally practical activities (playing, learning, work); means and methods of practical work (planning, design, modeling, forecasting, research, orientation in different types of activity); the competence of information technology; adaptive competence (professional mobility, identity, transformation); correctional competence; qualitative (adequate assessment of the quality of personal knowledge, professionally relevant research competence, and the level of social and professional adaptation).

The structure and content of the competences established and conventionally grouped in the process of this research are characterized by transdisciplinary, interdisciplinary and subject-specific properties. Transdisciplinary level involves social and professional knowledge, skills and personal qualities of the student, as a professional, in the nearest future which are universal in their character. Interdisciplinary level is based on interdisciplinary communication, on modeling decisions with team interaction, development of operational competences to study successfully the material of non-core courses. Subject level is mediated by the content of the courses and, at the same time, the content of the competence mediates and modifies the didactic units of educational knowledge.

Design and development of student research competence requires a well-designed pattern, clear objectives, and awareness by all participants that the study is relevant and the methods are appropriate, as well as engagement in experimental and pilot projects. These competencies are fully subordinated to the logics of research and are congruent, or identical, to an actual, authentic, scientific research.

3.2. Scientific Methods to Support the Process

Scientific methods to support the process of student research competence development serve as organizing, pedagogic and methodological mechanisms for implementing scientific outcomes into the educational institution practice. Here, there is a variety of relationships and dependencies contributing to multifactorial manifestation of synergy as an approach to develop research competence with respect to its methodology, theory and techniques.

The first is methodological level based on the conceptual ideas of synergetic approach and defined as multicomponent education comprising interrelation of the following elements: Goals, educational information, facilities enabling interdisciplinary communication between a teacher and his students, forms of their activity, and ways and means to implement pedagogical leadership in students' learning and other activities. The integrator for all the elements determined is the synergy of the teacher and students.

The effectiveness of the methodological level depends on the level of scientific and methodical qualification of university teachers, because it implies dependence on the social and economic development of the state, society and industry, the key ideas in developing professional identity and enhancing his professional education and training; ideas and concepts related to humanitarian and professionally contiguous courses studied;

a synthesis of traditional and innovative experience; efficiency factors for successful social and professional activities of the graduates staring their career; justification of application (along with a synergistic approach) modular, designing, technologic, target and other modern concepts, determining the ratio of these approaches in developing research competence, implementing the synergetic principles and assessing their productivity; conceptual approaches in planning and implementation of educational plans and curricula, educational content, technology, teaching methods responding the demands essence of student research competence.

Theoretical level is represented by a set of principles that form the basis of synergetic approach for didactic categories in their specific forms, methods, tools of learning, forms of learning, organization of the teaching and learning activities for better acquisition of specific scientific and practical professional content. These may involve the content and technology of education, other didactic systems developed in terms of their application at university conditions, the didactic systems of student independent research work and learning techniques; pedagogical modeling of student research competence development.

Methodical level is realized through a set of theoretically and practically reasoned and tested methods that are interrelated, complementary and interdependent from one another and, thus, help in forming, or developing, the research competence. These techniques are aggregated and based on the content of the curriculum courses, the teachers contribution into materials for study, their structure and presentation manner, on the student learning, the design and implementation methods of teaching materials.

Methodical level creates conditions for practical implementation of the methodological and theoretical levels. This is stipulated by the fact that any methodical system in its broad social and educational context is based on the process of transmitting and assimilating professional and social experience. The methodical system central elements include both teacher's and student's activities functioning and developing in the process of learning, based on the specific content of the training material (i.e., professional training content). The role of a teacher in implementing synergy principles means, first of all, the activities to forecast relevant structures of student activity which are focused on developing research competences in humanitarian environment. It is focused on processing, transforming the elements of social and professional experience which agree to new standards of higher education, and other curriculum materials and requirements to appropriate educational materials, and, consequently, create the necessary pedagogical conditions for effective achievement of the goals set. The next activity is the learning process experienced by students. Extrinsically, it could be considered as transformation of the student' already existing experience in the learning procedure through assimilation of new elements of social and professional experience, as well as through revising the content of professional training materials by the teacher, and updating the contents of the professional education and person's self-transformation experience.

The performance techniques for assessing acquisition, transformation, and self-transformation in reality are nothing but the process of transmitting the knowledge transformation experience into competencies. Ideally, it should meet the needs of students realizing themselves as future professionals, i.e. which are at the stage of the start of their professional development.

Hence, each of teacher and student activities has an independent status in the structure of the educational process and is used as methical systems of teaching and learning. The system of instruction in learning environment is considered as a system of necessary and sufficient conditions for teaching and management. The content of the system covers all decisions made by the teacher when selecting the learning material, transforming the content into the system of tasks to be addressed, structuring and arranging the learning material (explanation, learning styles and methods), selecting necessary and sufficient situation-specific forms and methods to influence certain students (or group as a whole), to achieve productive management results in students learning, as well as success in the whole pedagogical process.

The statements and findings of the conducted investigation make the scientific and methical basis for designing, developing and methical implementing research competences, and their synergy as the essential feature and, also, part of humanitarian education (normative and methical documentation, content, learning and testing tools) and practice – oriented structure of higher education modernization (i.e., its upgrading).

4. CONCLUSION

The efficiency of the issue investigation has been confirmed by the results of experimental work in educational practice of higher educational institutions, in curricula redevelopment and upgrading the plans and content of social sciences and humanities courses, a variety of didactic materials, a package of research competences, implementation models based on synergetic principles, recommendations, scenarios of interdisciplinary modules, etc. Strengthening the role of synergy in the development process of research competence for humanities is able to increase the level of creative potential of prospective professionals and, hence, is necessary for productive sectors of the economy and labor market.

For these all above mentioned reasons, our work, in our opinion, may be helpful for practitioners of humanitarian higher education institutions, as well as for further development and thus contributing into the process of upgrading the system of higher education in Russia.

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