

Chapter 2

Formation of an Effective Multi-Functional Model of the Research Competence of Students

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ABSTRACT

At the present stage, education in Russia is undergoing multiple changes, affecting both organizational and content aspects. Particular attention is paid to the formation and development of research competence among students. The chapter considers the construction of a multifunctional model of research competence of students. The developed model is an open and dynamic system that includes a number of interrelated and interdependent components consisting of a set of tasks, content, elements of the activity of subjects of the educational process, effective methods and methodological techniques, diagnostics and results. A methodology for developing research competence through a three-level program is proposed.

INTRODUCTION

Increasing level of vagueness of environment and dynamism of flowing processes, the change of role of human in production require forming of new competences. A human is considered not only as one of resources of production but also as a main value of organization. Lifelong education becomes a condition and a factor of development of new professional personality, who is not only competent but also capable of creating and showing the research competence. It is a factor of growth of country's scientific, technical, and intellectual potential, way to involving in the culture of the country and the world, to strengthening of spirituality and social life.

The ability of qualified specialist to carry out certain professional activity gets the special importance and becomes the basic object of evaluation and property of quality of education. It is recognized that it is necessary to pay special attention to the competences, which are required at the labor market in accordance

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with the international standards of ISO – 9000. The most important skills during the selection of leaders are the manageability, the ability to non-standard decisions and solve problems, and leadership qualities.

Social and behavioral skills (ability to work independently, teamwork skills, honesty), and ability to solve nascent problems are taken into account during the hiring of specialists. The specialist's professional skills, ability to solve problems and the ability to cooperate with others are important regardless of the type of firm, where the employee is going to work (innovative or traditional).

That are capacity for making decisions, professional skills, ability to work independently and in a team that often appear to be deficient, as well as the existence of a high level of development of the research competence (openness to the new ideas, the use of creative approaches, skillfully build relationships and so on).

HR-departments pay attention to technical, social and behavioral skills: conscientiousness, ability to work independently, ability to cooperate with others. The ability to solve problems is one of the most important skills, which is in lack among the majority of the employees of innovative companies.

The most substantial distinction between the types of the skills highly demanded by innovative and traditional companies, is related to cognitive skills of higher-order (ability to accept non-standard decisions, openness to the new ideas) and research competence which is not below than rational level.

The assessment of the level of completeness of some competencies of the specialists of primary and secondary level (on a five-point ordinal scale) is very low. For example, good organization and discipline at work – 3,2 points; responsibility at performing tasks - 3,5 points; independence in making decisions - 2,7 points; self-improvement – 2,9 points; level of general education and capacity for self-development - 2,4 points.

The obtained data indicate the necessity to find means and methods to form additional competencies for students with the aim of increasing competitiveness on the labor market. Analysis of the demanded qualities shows that perspective specialists are those who have formed research competences at the proper level. The study of the experience of the institutions of general secondary and high education shows that they are considered theoretically, but only separate components of the formation and development of the research competence are realized.

There is a contradiction between the social need for workers, specialists and leaders who possess research competence, which allows them to orientate themselves through the constantly changing social and labor environment, analyze and evaluate their professional level, and the deficit of the appropriate socio-pedagogical conditions for its formation. This contradiction led to the need to develop a model of the research competence and methods of its formation among students taking into account the current requirements, historical experience and innovative approaches.

BACKGROUND

Analysis of formation and development of the research competence showed that the problem of development of research activities, research training has a long history.

The application of the research method in teaching started in the epoch of antiquity.

The Greek philosopher Socrates used a method which was a research conversation with students: contradictions in the generally accepted understanding of certain phenomena of the surrounding world were revealed with the help of witty questions asked by each other, a discrepancy between the usual judgments and those that gave close analysis were also revealed.

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