

# Chapter 18

## Formation of Invariants of Research Competence of Students: Situational and Contextual Approach

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### ABSTRACT

*Professional competence is based on the invariant, which is a systemic and structural education that contains five interrelated components: axiological, motivational, individual-psychological, instrumental, conative. There is no universally accepted notion of “competence” and “competency”. There is no scientifically grounded definition of the invariant structure of competence of the subject of professional activity. The question remains of a productive pedagogical model containing a system of didactic conditions and modern pedagogical technologies that are adequate for the purpose of forming invariants of research competence of student. The basis for the development of such a model was the theory of contextual education by A. A. Verbitskiy. The basic unit of content here is the learning situation, which is a problematic nature. The system of such situations may be based on a situational and contextual approach to the formation of invariants of the research competency of student.*

### INTRODUCTION

The issue of building research competence of a student is a prevailing task of modern vocational education. The leading research ideas are as follows:

1. The invariant of research competence of university graduate is an integral system of stable links between its components (axiological, motivational, instrumental, individual and psychological, conative), the content of which is accomplished according to the types of professional activity;

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## **Formation of Invariants of Research Competence of Students**

2. Breeding invariants of professional competence is carried out through the use of a pedagogical model containing training situations that determine social and substantive context, content of the research competency invariants of high education graduates.

*Research Subject:* Developing invariants of student research competency through the implementation of situational and contextual approach.

## **BACKGROUND**

Different approaches to defining the structure of research competency of a student have evolved in the work of many Russian and foreign professors and psychologists (Y.V. Vardanyan, ZH.G. Garanina, A. A. Derkach, N.V. Kuzmina, M. Kyaerst, A.K. Markova, L.M. Mitina, J. Raven, N. Chomsky, etc.). Introduction of Russia to Bologna Process has given priority to such research (A.G. Asmolov, A.A. Derkach, V.I. Bajdenko, O.M. Bobienko, A.A. Verbitskiy, A.A. Dunyushin, E.F. Zeer, I.A. Zimnyaya, P.F. Kubrushko, N.N. Nechaev, A.V. Rajcev, L.Spenser, S.Spenser, A.I. Subetto, S.Uidet, L.P. Urvancev, V.D. Shadrikov, A.V. Hutorskoj, E.V. Shishchenko, S.A. Shchennikov, N.V. Yakovleva, R.Sanchez, Dubosc, J.P., Hutmacher W., Sanchez R. and many others). Along with knowledge, skills and experience, they are represented in the structure of competency, which comprises axiological orientation, motivation, professional direction of a person, creative abilities, and mechanisms of self-organization and self-regulation of activities. Competences are characterized by composition complexity, iter subjectivity, focus on practices, motivated use, etc. (Zimnyaya, 2003).

Identification of pedagogical, psychological and pedagogical, didactic and methodological conditions for the formation of professionally important qualities with a student are highlighted to research of many authors L.G. Archazhnikova, N.S. Aulova, N.A. Bakshayeva, N.M. Borytko, S.K. Bondyрева, A.A. Derkach, A.A. Dunyushin, I.A. Vishnyakov, I.A. Zimnyyz, E.F. Zeer, G.A. Kovalev, P.F. Kubrushko, Ya.A. Kuzminov, O.G. Larionova, M.D. Lapteva, V.Ya Liaudis, T.A. Matveeva, N.N. Nechaev, V.A. Popkov, A.F. Prisyazhnaya, J. Raven, A.V. Raitsov, E.A. Sadvorskaya, V.V. Serikov, S.N. Silina, L. Spencer, Yu.G. Tatur, A.V. Filippov, V.D. Shadrikov, L.B. Schneider and many others).

The search of an adequate pedagogical theory that could serve as a basis for the concept of invariants formation of a professional competence of student has led us to a contextual learning theory that has been developed for more than 30 years at the science and pedagogical school of A.A. Verbitskiy (N.A. Bakshaeva, N.V. Borisova, T.D. Dubovickaya, V.N. Kruglikov, M.D. Ilyazova, O.G. Larionova, V.F. Tenishcheva and many others.).

## **Issues, Controversies, Problems**

There are a number of unresolved problems that make it difficult to forming a research competence of student at the university. Within this range we can define the following issues:

1. There is no universally accepted notion of “competence” and “competency”, which are defined by different authors as ability, readiness, property, quality of the person; However, the notions of “competence” and «competency” may carry the same meaning, and may be separated on different grounds.

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