

Chapter 14

Aiding the Transition of Students From School Into Technical University

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ABSTRACT

This chapter is about different aspects of creating university-based professionally orienting environment. Issues of students' professional self-determination in transition from secondary education to high school are considered. The author suggests to arrange resource center as a training and research innovative complex for solution of youth's problems with early professional orientation, their motivation, for recruitment and selection of the most prepared for further study. As a result of the center's usability there is a developing trend towards form and direction diversity in scientific, educational, and industrial integration, growing university penetration into secondary school, and high school scientific research's impact into industry.

INTRODUCTION

Under modern conditions, special status is provided for solutions to the problem of professional development and the training of scientific and scientific-pedagogical personnel in non-stop specialized engineering and technical educational systems based on the integration of science and education (Zelencova, Zelencova, & Zelencov, 2014). Obviously, such solutions should be based on the integration of science, education, and production; and should match the new stage in personnel training in a non-stop preparatory system. Such contemporary attitudes are based on different theories and techniques proven by practice. To illustrate the argument – the trend being reflected in conceptual foundation of educational process taught in Bauman Moscow State Technical University (BMSTU) – a well-known method, “The Russian method of craft training,” is used (Tsibizova, 2011). The very same system was notable for its reasonable and multistage approach to education. All the works were scientifically analyzed. The master-craft teachers were absolute authorities in their fields, and (as experts) were experienced enough

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to be able to see the mistakes of their students and to provide explanations. There were three (3) main components (Antsupova, 2005):

- Serious theoretical preparation equivalent to the same quality preparation offered by traditional universities;
- Practice within real factory conditions;
- Non-stop communication between the school and real factories.

Students' professional self-determination (as a process) is influenced not only by educational learning, professional orientation, and research-and-development components, but also by the necessity of personality development in individual and social directions. Such a process 'evolves' the holistic development of the personality of those students who possess a flair for science, research, and creativity and who are considered to be the subjects of the development of professional and social self-determination. It is characterized by the fostering of a desire for creativity, self-expression, and self-affirmation in professional activity; by stable and dominated motives, views and interests, position to knowledge and acquired know-how, social norms, and values; level of moral and aesthetic culture; and development of self-awareness.

Global society needs the educational system's reconsideration that has manifested itself in the practical implementation of a new educational paradigm – one enabled to transform the educational space of a 'high-school-to-university' transition as an important component of a system of continuing professional educational ; and enabled to emphasize the necessity of research with respect to social movements in the context of educational reforms (Arnové, Torres, & Franz, 2012; Tsbizova, 2012).

The author's understanding that the economic and social terms of societal development influences education directly makes the problem even more relevant in terms of its research impact concerning the formation, development, and current stage of the educational environment in the world, in the country, and in a given society (Ivanov, & Ivanova, 2015; Biggeri, & Santi, 2012).

Modern society needs educative, moral, professionally competent, pragmatic people capable of making decisions and of taking correspondent responsibility for those decisions; people who are capable of cooperating with others; people who are notable by their upward mobility, positive dynamics, and constructive communication resulting from social expertise (Arakcheeva, 2012; Sergeeva, 2016). Society demands that young people in their teens define their professional path. In such circumstances, one of the main tasks of high school is to reveal, teach, engage, and support the youth who are interested in science – to regenerate society's scientific potential.

These goals are aimed at the pre-institute period, as the personality is built up in the secondary school period.

In these circumstances, six of the main purposes of high school are as follows:

- To reveal and develop creative abilities and a flair for science;
- To mold key competences and professionally-important personality features as well as to mold motives towards practical implementation of the knowledge received;
- To provide necessary educational conditions for talented children;
- To guide and help youth in their professional orientation;
- To propagate science; and
- To choose those students who are most prepared and ready for the educational process.

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