

# Ability to Work in Professional Community as Universal Competence of a Modern Engineer

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**The author analyzes the meaning of “competence for collective work” as engineer’s ability to work in professional community. She reveals the content and structure of the competence, discovers its influence on whole pedagogical process in higher education.**

**Key words:** *competence, universal competence, qualification, professional skills, professional experience, professional community, professional consciousness, professional thinking, professional mentality, standard of professional behaviour.*



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Professional skills and experience have always been key conditions for successful professional activity. These are the characteristics taken into account by employers if there are some applicants for one vacancy. Apart from it, the communicative nature of any work requires that all employees should be able to work in team. The importance of communicative skills is reflected in the description of universal (key) competences developed by the education structures of the European Union: “to study”, “to search”, “to think”, “to collaborate”, “to set about work”, “to adjust” [2. p. 24].

Keeping with recommendations of the European Council the competence “the ability to work in team” includes the following skills:

- to ask for other opinions and to consult a specialist;
- to take part in a discussion expressing your own opinion;
- to work in a group, to adjust conflicts, to negotiate, to enter a team, to contribute to joint activities and to prove solidarity.

The above mentioned skills reflect the nature of interaction between parties of professional activity.

Russian system of professional education, which acts according to the federal state educational standards, traditionally refers development of this competence to Humanities and Social Sciences study area (HSS) [3]. The competence component of the basic part of this study area for engineers consists of the following competences, which, as we think, could be structured into universal professional competence of “working with others”:

- ability to manage small groups (universal instrumental competence);
- ability for social interaction with society, community, team, partners, ability for collaboration and conflict adjustment (competences of activities, communication, public and private lives);
- ability for team work and cooperation, the skills to manage executors’ activities and to come to decisions in case of different opinions (competences of teamwork);
- ability to work on interdisciplinary projects.

It is obvious that the description of the competence that is in opposition to the competence of “individual work” needs clarity and precision, which will make professional education more objective. In our opinion, this core element could be such a phenomenon as “professional community”. Professional community is a variant of social associations organized for effective achievement of collective professional goals – to receive real labour product, to implement collective professional mentalities and values [1, p. 99].

Accuracy of formation of ability to work in professional communities as a universal professional competence is ensured by taking into account the hierarchy of professional communities (Fig.1).

Team work competence should be regarded as a category of work in professional communities. It determines a set of pedagogic objectives to form soft competencies that ensure effective joint activity based on, professional awareness, professional thinking, professional mentality and standard of professional behavior. Thus, in this case, the succes-

sion of the pedagogical process should be the following (Fig. 2).

It could be achieved by means of developing dual training system or net interaction of educational institutions.

The experience of Training Center of Auto-construction in Kaluga College of Informational Technologies and Control Systems (state autonomous vocational secondary institution) is very interesting. They, together with the Volkswagen Group Rus factory (Kaluga), implement a dual training system for technical staff. They adjusted German curricula and Russian educational standards for the following specialties: “Mechatronics”, “Electrical and automatic system operation”, “Auto service” and “Automechatronics” by paying more attention to practical training (internship) and to closer cooperation with the enterprises where the internships take place. The training Center gives theoretical knowledge and basic practical skills while the Volkswagen Group Rus ensures special training to develop particular practical competencies in professional environment such as: to acquire necessary special knowledge

Fig. 1.

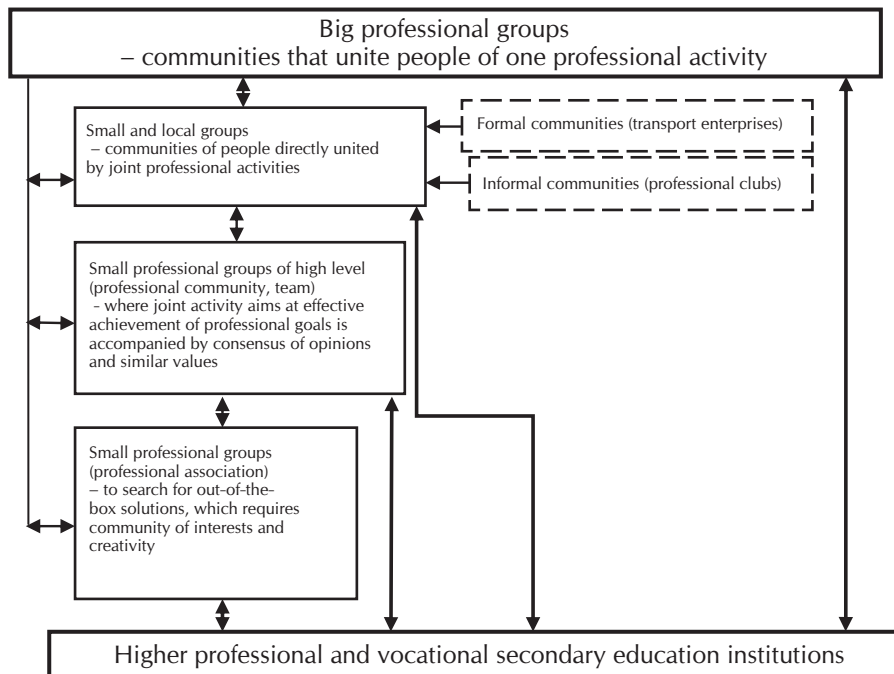
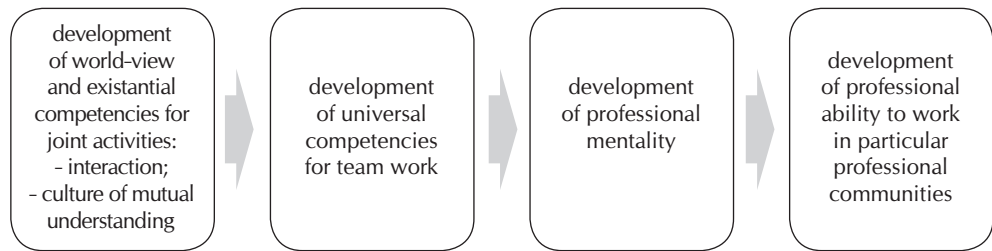


Fig. 2.



and skills, safety arrangement and precautions, use of quality management system, use of informational technologies, team work behavior, cooperative abilities, high working efficiency and focus on success, willingness for continuing education, etc. The dual system graduates receive diplomas of vocational secondary education and international certificate proving their practical competencies. Having team work competencies and practical skills these graduates are more ready for professional activity than the graduates who took traditional courses of secondary vocational education.

But it should be taken into account that the educational standards of vocational secondary education are mostly focused on acquiring particular practical skills for particular working specialty. Thus these standards cannot ensure training of highly qualified specialist with engineer's knowledge. The problem of higher education institutions is that their graduates filled with academic knowledge cannot or were not trained to work in real industrial environment. At the same time modern employers need highly qualified engineering staff with basic skills of workers who can operate hi-tech equipment, interpret drawings, use manuals written in Russian or foreign languages, apply information systems, work in team etc.

Thus, the conclusion is that competence as the ability to perform effectively professional activities as well as team working skills are developed in the process of personal participation in the work of a professional team but not in the process of work observation.

In 2014, Federal state autonomous educational institution of higher professional education "Immanuel Kant Baltic Federal University" plans to enroll

students at bachelor and specialist degree programs such as "Technology of transport processes", "Service" and "Auto service" that are developed for students to acquire not only theoretical and practical knowledge and skills of the chosen specialty but also engineering qualification. In other words, they will be high qualified specialists of blue-collar occupations.

To develop curricula for Bachelors of applied science programs it is more reasonable to use modular-competence approach. This approach allows managing the training process adjusted for employers' needs while the students have possibilities to develop practical skills in the workplace, for example, by implementing interdisciplinary projects and solving the problems modeling real working environment.

The modular-competence approach fits into the framework of lifelong education concept, as its aim is to train highly qualified specialists who are able to work in a constantly changing working environment and keep on self-developing in professional area [4].

Thus, the training programs based on this approach will allow future graduates to adjust quickly to real working environment. Being flexible the programs can be easily updated and reorganized by changing some modules of a basic curriculum in response to changes of employer's requirements to the graduates, which greatly contributes to the graduate's competitiveness.

Another advantage of these programs is a possibility to create an individual learning path by combining modules and developing net educational programs between educational institutions and enterprises.

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