

THE FORMATION OF THE SCIENTIFIC COMPETENCE BACHELORS IN STUDYING PHYSICS

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At present, the radical changes are being undergone in the society – the processes and the technologies increased growth rates in the world, that it is resulted in the industrial society into the informational one.

Thus, to the higher professional and the vocational education in Russia the following goals and the tasks are being defined:

- the emphasis and the shift change from the content and the disciplinary – subject side (e.g. at the simultaneous maintaining and the preservation its advantages) upon the competences and the expected results, having come from the educational process student – centered orientation and its further direction;

- the reflection the dominant perspectives in the basic educational program, having permitted to be orientated the graduates' preparation and the school – leavers' training for the efficient activity in their future occupation and their vocation;

- the basic educational programs modular organization usage;

- the learners' and the pupils' freedom degrees increasing, concerning the different and the various individualized educational and the vocational trajectories choice by them.

So, the possibilities in the graduating students' and the graduating seniors' general competences formation will have to be defined, and also the conditions will have to be created, which are quite necessary for the personality's all – round development, the general (e.g. the general scientific, the instrumental, the personality – socially ones), and the professional, and the occupational competences formation in the Institutes of higher education, in the Universities, in the Colleges, and in the High schools.

For all this, it is quite necessary to be organized the student's activity, the most suitable to his interests that can be achieved and may be provided by the quality improvement, having used in the technologies and the methodologies professional and the occupational education, as the traditional, well as the innovative ones, and also the methodological – educationally materials development, having permitted the students' independent work to be organized the most efficiently.

In this respect, the students' research activity organization has the great significance, which is promoted to the motivation increase of the academic subject's study; this is resulted in the scientific activity elements formation that is quite significantly, in terms of the general scientific competences

development, as well as the career – oriented bachelor's preparation and the further training.

Therefore, the classroom studies can and should be organized in a manner, that the necessary competences were laid, formed, and thoroughly developed at them.

So, the research laboratory works carrying out is one from the general scientific competences formation methods. The undoubted advantages of the cognitive activity this type use are the following:

- the students' high degree of their activity and their independence during the experiment carrying out;

- the abilities and the skills working out of the observations and the measurements results processing with not only the conventional means, but the new information technologies usage.

In our turn, we suggest the students the following: it is necessary to be singled out **the object and the subject**, in connection with the scientific cognition logic, and also to be formulated the carried out research **hypothesis**, the reliability of which will be checked out in the course of the work carrying out.

Besides, the laboratory work name is being changed. For example, it is made from «The Brewster Law Verification» to «The Light Polarization Phenomenon Research». However, not simply the name is being changed; the bachelors' cognitive – educationally activity accents are being shifted: the research is carried out, in the course of which the students are received the subjectively new knowledge, instead of the step-by-step user manual, which is corresponded to the reproductive cognitive activity. And this is already the completely different cognitive activity level.

So, the lecturer, as necessary, is carried out the dosage help to the students at such kind of work carrying out. As not all the students can handle with this kind of the task fully themselves.

Moreover, the study may be imposed that theoretical material, that is not being covered at the lectures. That, in its turn, is allowed the students' independent work to be well – organized one.

Thus, the bachelors' research activity is the effective and the efficient method of the general scientific competences formation, that it is allowed to be developed the students' the thinking independence; the ability to be formulated and to be solved the challenges with the knowledge usage from the different areas and the various fields; the ability to be proposed the hypothesis, to be predicted the outcomes; the ability to be critical to the results obtained, to be tested the hypothesis, to be drawn the conclusions; the various research methods possession (e.g. the observation, the experiment, the analysis, and the synthesis); the ability to the self – conscious theoretical material study.

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