

The problem of the organization of the student independent work at studying mathematics

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At the present stage of the training in the institute of higher education the independent work (IW) is becoming one of the major factors in the preparation of the specialists. On the one hand, it is caused by the quantity reduction of the classroom activities, and, on the other hand, increase in volume of the teaching material caused by growth of the stream of the scientific and technical information. The student and the graduate of the institute of higher education should be able to acquire new knowledge and practical skills without assistance.

In the higher education didactics the IW is subdivided into the classroom activities and out-of-class work. One can refer the work at lectures, seminars and practical training to the classroom work. Preparation for studies, final tests and examinations, research activity, carrying out test works (projects, yearly essays, graduate works) are regarded as the out-of-class forms of the IW. For the successful organization of the student independent work at studying mathematics it is necessary to create the conditions for the realization of these forms: to carry out selection and dosage of the teaching material, to devise didactic materials and methodical recommendations about their use, to organize the management of the student activity and the control.

Now almost in all institutes of higher education the research and development in the field of the successful organization of the student independent work at studying mathematics are conducted in one way or another. So there is an experience of the management of the out-of-class independent work by means of the training programs, the teaching aids for the various courses, the system of the project tasks, the semester plans. However, the use of these methods requires the additional components. For example, the system of the project tasks does not include the organization of the access to the resources that is necessary for the realization of the task. At best teachers give the references to the literary sources and set report forms. Students spend the most part of their time on the search of the material instead of studying of the problem which they should solve carrying out the task. The semester plans and educational process schedules contain the information about types of studies and terms of the reporting delivery but do not have the methodically worked out content part. There are theoretical materials, practical tasks, control questions and references to the additional information sources in the teaching aids created for the educational and methodical support of the discipline but the connection of this course with other disciplines and its place in educational process is not noticeable.

So the problem of the intensification of the IW as the kind of the student educational activity at studying mathematics is urgent and demands the serious scientific and methodical approach. We will mark out the most important factors influencing the success of the student IW. First of all, it is a motivational factor: it is necessary to define accurately the purposes and problems for the student at each stage of the IW as well as to outline the prospect of carried out works for the creation of the positive motivation. Besides, there should be the elements of the creative approach which intensify the positive motivation in the student independent work. We can mark out the self-reflection factor. It is very important how the student estimates his success, makes up the conclusions about his mastery level in the teaching material. In many respects the self-reflection factor influences the motivation; therefore the complex approach to the support of the stability of the mentioned factors is necessary. Also it is important to receive the total results of the student work. They are necessary for the subsequent correction of the methods and forms of the independent work organization. Thus the quantitative and estimate factor in its turn influences two previous factors and allows generating the general picture of the influence of the positive factors on the success of the student independent work.