

FORMATION OF PROFESSIONAL COMPETENCE OF FUTURE PHYSICS TEACHERS THROUGH INDEPENDENT EDUCATION

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ABSTRACT

The article discusses the issues of forming the competence of future physics teachers through independent learning. Accordingly, in the undergraduate curriculum, the hours allocated to the auditorium and independent study are allocated in approximately equal proportions. The authors classify tasks according to the parameter of didactic purpose: acquisition of knowledge, consolidation and systematization of knowledge, formation of skills, formation of skills. In order to improve the effectiveness of independent study in order to improve science programs, students were invited to create a plan, synopsis plan, base data scheme, comparative table, electronic information resources and search resources with Internet resources.

KEYWORDS: *Competence, Professional Competence, Bachelor, Independent Study, Professional Activity, Curriculum.*

INTRODUCTION

Approved by the order of the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan dated August 14, 2020 No 418 "5110200 - Qualification requirements for undergraduate education in Physics and Astronomy" [1] lists the professional competencies of bachelors. -knowledge of current issues of public policy, be able to independently analyze socio-economic problems and processes; - be able to use information technology in their professional activities, have mastered the methods of collection, storage, processing and use of information, be able to make informed decisions in their activities; - be able to independently acquire new knowledge, work on themselves and organize work on a scientific basis.

In the section of professional competencies: - Competence to be able to independently analyze social problems and processes. Independent education also plays an important role in the formation of the proposed special competencies.

Accordingly, in the undergraduate curriculum, the hours allocated to the auditorium and independent study are allocated in approximately equal proportions. Accordingly, the issue of forming the professional competence of future physics teachers through independent education plays an important role.

Analysis of the literature in this area shows that despite the fact that the methods, forms, methods and other aspects of the organization of independent work of students are sufficiently studied,

there is no work on the organization of independent work in solving problems of increasing its role in modern education and professional competence. The authors say that “a competent professional seeks the future through independent learning and can see the changes in it. “Competence will be future-oriented even if it is implemented now” [2; 110-b]

In D. Raven’s work “Competence in Modern Society,” he outlines what qualities are necessary for the subject of labor in any field of professional activity. These qualities include the ability to work independently without constant guidance from the outside; willingness to take responsibility for their actions; show initiative; independently find the problem and ways to solve it; ability to apply existing knowledge and experience in new and non-standard situations; ability to communicate with other people; independent acquisition of new knowledge, taking into account existing experience and feedback from the professional and social environment; the ability to make decisions based on analysis and justification in the absence of necessary and sufficient data and tools [3; 181-p].

Despite the large amount of pedagogical research on the organization and content of independent work of students, there is still no single didactic and organizational approach to the essence of this process.

In the works of NV Solovova and O.Yu. Kalmikova are given tasks of different modern forms and types for independent work of students. The authors classify tasks according to the parameter of didactic purpose: acquisition of knowledge, consolidation and systematization of knowledge, formation of skills, formation of skills. The authors include one type of independent work - work with textbooks, additional literature, normative and legal documents, audio and video recordings, professional and popular articles [4; 96-b].

How can its role be enhanced in students to develop professional competence through independent learning? First of all, it is necessary to increase the time allocated to it in the normative documents. M.V. According to Bulanova-Toporkova, in many countries of the world the ratio of students' independent extracurricular activities to classroom lessons is 3.5: 1. This ratio, according to the researcher, contributes not only to the deepening of knowledge of students, but also to the formation of interest in professional knowledge, the development of ways of self-development, self-education. "Therefore, it will become a key resource for improving the efficiency of training" [5; 64-b].

In this regard, when analyzing the curricula of universities (institutes) training teachers in the Republic of Uzbekistan, it is gratifying that the hours allocated for independent study are equal to ~ 40%. But they do not talk about the forms and methods of independent learning. They are given separately for each subject in the curriculum. The analysis of the sections devoted to independent learning in the programs was based on the programs developed in accordance with the curricula approved in the last 2020.

First, the model curricula of academic disciplines, which are the main basis for the formation of general competencies of future teachers, were analyzed.

In order to improve the work in this area, the research conducted surveys among students and studied the pedagogical conditions necessary for the development of professional competencies through independent learning. Studies have shown that the implementation of independent learning in students requires an individual approach (because, different cognitive abilities,

different intensity of mastery, different teaching methods, different motives for mastering professional competencies, etc.). These are not always taken into account by teachers.

It is known that entrants come to the institute at different levels of independent study. They were mainly trained independently in preparation for the entrance exams. In the process, they only did exercises such as storing data in memory and performing small mathematical operations. In school, they did their homework and wrote essays under the guidance of a teacher. There are no separate sessions on how to effectively learn independently.

Research shows that the effectiveness of independent work depends not only on the department that teaches the subject, but also on the pedagogical conditions created at the institute (availability of sufficient literature in the library, electronic resources, independent auditoriums, laboratories, experimental tools, etc.). Such conditions, of course, do not fully exist in every pedagogical higher education institution. In the course of the research, recommendations were made to improve them and practical work was done.

In order to improve the effectiveness of independent study in order to improve science programs, students were invited to create a plan, synopsis plan, base data scheme, comparative table, electronic information resources and search resources with Internet resources. In addition, the processing of lecture texts, articles; development of diagrams, tables, dictionaries, puzzles, crossword puzzles for systematization of educational material; performance of test tasks; answers to control questions; interpret, summarize, review the text; compiling a list of sources on the studied topic, including electronic resources; working with computer programs, etc. were included in the recommendation.

The implementation of independent education was not limited to the improvement of teaching materials, the preparation of recommendations, but also required teachers of the department to conduct trainings on the organization of independent education of students. Accordingly, for teachers: 1. Diagnose the readiness of the student to work independently 2. The content and structure of professional competence, the stages of its formation 3. Readings were conducted on the content and forms of independent work, ensuring the formation of professional competencies.

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