

Using Productively an Independent Education and the Electronic Sources in Improving the Competence of Biology Teachers

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Annotation

The article is devoted to the effective use of independent learning in the training of biology teachers and the creation of its e-learning resources. It is known that high school teachers, including biology teachers, who work as specialists, have a special role to play in shaping the competence of a biology teacher. We know that the independent work of the listener is an integral part of the curriculum, which is designed to master a particular subject in the curriculum, and it is required to be provided with methodological and informational resources. Tasks independent of biology can be written, practical, research and creative, depending on the nature of the subject. It is advisable to have more independent work assignments, especially when using problem-based learning technology.

Keywords: biology, self-education, teacher, design of the educational process, independent work.

In order to provide the following the laws of the President of Uzbekistan Republic “About the ways of preparing the pedagogical staffs, retraining the public education staffs and improving the system of making better their qualification” PD-3289 number on September 26, 2017, “About foundation of Preschool education of Uzbekistan Republic” PD-3305 number on September 30, 2017 and to retrain the pedagogical staffs in preschool, primary and the educational organizations that are out of school and to improve the productivity of increasing their qualification “**upgrading constantly the professional knowledge, aptitude and skill of pedagogical staffs, increasing the professional preparation in important degree to provide the education quality according to the modern demands, absorbing aptitudes of independently thinking, developing the pedagogical honor and competence**” is showed as a main task in the law of the Cabinet of Ministers “about the ways of retraining the pedagogical staffs and organizing the improvement of their qualification” PD-1026 number on December 28, 2017.

Consequently, retraining the experts who meet the modern requirements, mature in every way, competitive and those who have the ability to the problem independently is considered the essential requirement. The independent education has very important role to prepare the staffs that have such kind of features because it is impossible to give all information during the lesson in the period the area of knowledge and information is developing fast. The aptitude of finding the correct solution according to identified problem and requirements and independent thinking that is crucial to select its optimal equivalent is formed and consolidate in the process of doing creative jobs independently. In the result of listener’s own working the belief rises, he/she has aptitudes for independent studying, receiving the information, analyzing, summarizing and concluding.

The research object and used methods

The research works were committed between 2017 and 2018 in Training center under Gulistan state university. The process of improving the biology teacher's qualification was taken as a research object. Many listeners have difficulties working independently and using electronic education sources productively in this process, they do not have enough experience about it. During the research observation, talking, comparing the collected experience and information and comparing, scientific and methodological analysis and summarizing methods were used.

The results obtained and their analysis

Organizing purposeful lessons for pedagogical staff, retraining, revising study modules the course programs to improve experience from 2017-2018 school year is marked as a main task in the law with number 187 of the Cabinet of Ministers of Uzbekistan Republic "About affirmation of the state standards in general secondary and secondary special, vocational training education" which is accepted on April 10, 2017. The descriptions of knowing the biological objects, explaining, observing the process happening on them, conducting an experiment, concluding, a healthy lifestyle and ecological competence in the experience requirements for graduates of general secondary and secondary special, vocational training organizations in biology are given in this law.

The word competence comes up with the word "competere" in Latin language and means "I am deserved" and indicates to know, to have information and experience in certain field. (UzNE 2005)

Russian scientists, E. Zeer, D. Zavodchikov, thought that "competence" was a collection of actions aimed to organize staff's personal activity productively. One of the famous researchers of this field, R. Meyers, decided "competence – not meeting the requirement of the expert according to the certain criteria, but following and proofing it in producing". (Ivanov, 2007)

According to Russian scientist, M.M. Shalashova (2008) the expert's competence is their integrated personal feature and it is understood as an ability to solve the problems in the life and in the work with own knowledge, experience and skill.

I.A. Zimiya thinks (2004) competence is explained as personality characteristics for a certain person in modern pedagogical literature, while to competence is a collection of exact professional descriptions.

Usually the expert's competence is identified in producing according to the following features: (Parpiyev 2012)

- *professional ability
- *knowing well own field
- *improving own experience constantly
- *working on his own
- *responsibility for his own decisions

The researcher of Tashkent state pedagogy university named Nizamiy, A.K. Rakhimov (2019) showed that there were opportunities to form the student's natural and scientific worldviews by developing 1) the competence of knowing the biological object, understanding and explain the events and process 2) the competence of observing the biological object, event, process and doing experiments 3) ecological competence and healthy lifestyle.

Considering the opinions mentioned above, independent job assignments are very important to form competence of pedagogies of primary schools working as an expert, such as biology teacher. It is clear that the independent work of listener is inseparable part of education assignments that is marked in order to study certain subject in curriculum and it requires to be provided with stylistic and information sources. In other words, the independent work of listener is certain part of knowledge, aptitude and experience which is marked in certain subject of the curriculum and required to learn and it is a systematic activity which is done by the advice and recommendation of subject teacher. (Karshiboyev and others, 2011). The independent work in biology can be practical, written and creative according to the features of subject. Especially, it

can be better the importance of independent work assignments that's given by using problematic education technology is higher.

Independent job assignments plan

Weeks	The content of the independent work to be done
1-2 weeks	Forming the aptitudes of working independently on listener
3-4 weeks	Forming the aptitudes of using from modern ICT while learning independently
5-7 weeks	Forming and practicing the aptitudes of working independently which is crucial in improving own professionalism and studying new knowledge

While planning independent work assignments for listeners, in the first days of retraining the independent work assignments should be directed for working with study source which is suitable for learned themes, problem solving, committing certain problematic tasks, preparing for workshop, practical and laboratory sessions, collecting the materials from scientific magazines related to necessary topic, if it is directed to do homework from third weeks handing out the tasks based on modern information technology, teaching to analyze the work you have done and forming the aptitudes to defend personal opinions in it.

The listener has practical experiences for searching for necessary information, finding, saving and using by working with educational and methodical resources (study literatures, extra information resources, the collection of matter and exercises, the collection of problematic situations related to biology, special programs, collection of information and so on) that is located in special portals (Tojiyev, Karshiboyev, 2016).

In 5-7 weeks independent work assignments are required to be directed for complete forming the aptitudes to think independently in teachers, doing creatively the given tasks, making assignments which serve to find the most suitable solutions while doing the given task and has some alternative solutions. Especially, as it stated above there should be more assignments directed to the solutions of problematic tasks related to biology. This serves to form competence, meaning, this requires from teacher to work your own independently and creatively, to analyze and evaluate the taken information, to defend personal ideas, to discuss, to come to the certain solutions for the given problem and to select optimal variation.

Certain trends such as "from simplicity to complexity", "from generality to solving the real problem" should be followed while choosing the types and forms of the independent work. Becoming in different degree of listeners should be considered and it can be better that independent work assignments giving to them are made in 4 distinguished study degrees (noticing (knowing), reproductive, productive and creative). Also, being made special methodic recommendations for listeners to do independent work assignments and providing with it listeners completely are required. Otherwise, the productivity of the committed work may not be so high. Composing the independent work assignments by considering the difficulty degree in learning makes the listeners do these tasks according to their possibility. The productivity of the independent work is also related to the condition created in educational establishment.

However, following the requirements related to all subjects, providing with enough educational literature and sources according to the teaching subjects, creating a system which controls constantly the quality of committed independent work by listeners, giving them handouts on time, developing technological maps and methodical instructions to do laboratory and practical activities according to biology, deciding to create enough conditions for listeners in educational establishment are required in this process (Karshiboyev, 2010). This requires from professors and teachers according to the subject belongs to them in biology chair of higher education system to produce modern electronic education resources based on special program for listeners. Especially, it demands to be electronic textbooks and study instructions, special recommendations, collection of exercise and issue, hypermants, means of media, methodical

instructions, electronic test and tasks, electronic vocabulary and sources which help to provide independent learning related to biology in electronic educational resources of information source center in educational establishment. Moreover, it can be better professors and teachers working in higher education make as intellectual system of modern teaching in primary schools, collaborate with staffs and teachers in primary school in producing electronic information resources for secondary education system according to biology subjects, organize master lessons with special workshops and handouts for them in directions of chair, give methodical advices to them.

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