METHODS OF USING INFORMATION RESOURCES TO CONTROL STUDENTS' KNOWLEDGE IN BIOLOGY

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ABSTRACT

Introduction of modern technologies in the education system is one of the most actual issue. As a result of the rapid development of information technology over the last 50 years, data storage devices are optimized in terms of volume and weight. In particular, the development of interactive technologies and control programmes play an important role to control students' knowledge.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

Systematic monitoring of students' knowledge and skills is one of the most important conditions for continuous education. Controlling is a method of checking knowledge and skills that are inextricably linked to all other parts of the educational process. The main objective of knowledge control is to check and determine how the material has been mastered by the whole group or individual student. Regular check-ups teach students to complete tasks in a timely manner, systematically organize work activities, perform tasks within deadlines and overcome difficulties.

The followings are some of the key competencies that students should acquire as a result of their independent work assignments through information resources.

In our view, it is beneficial to use the Case Study method to control the process of teaching students' independent work using information resources and to achieve a certain level of knowledge and competence by students.
Case study is a training technique that uses accurate real time descriptions.
The purpose of the case study is to help the student not only gain theoretical knowledge, but also be able to solve practical problems and acquire the following skills:

1. Independent study of new information.
2. Skills in working with texts and reference books.
3. Development of methods of information search and analysis.
4. Coordination of theoretical and practical knowledge.
5. Increasing the motivation of learning: active involvement in the learning process and active learning of the learning material.
6. Develop basic written and oral skills.

Common cultural competences	It has the ability to use, summarize and analyze data
	Ability to prepare a brief description of the scientific literature
	Able to acquire new knowledge and skills independently
	Knows the use of new knowledge and skills
	Has the ability to work in a team
Professional competences	She is able to apply her knowledge in solving tasks
	Can assess the complexity of tasks
	Modeling of structure of objects and processes and ability to design
	Able to independently organize research and implementation of tasks and self-development using information resources

Figure 2.2. Structure of competences formed as a result of students' independent work assignments through information resources in biology

Case study technology can be used in case studies to prepare students' knowledge in advance and without preparation. The following types of case studies are offered to implement the case-control method:

1. Classical case.
2. Case study.
3. Final case. The purpose of use of each case form in the process of controlling the formation of knowledge and competences, the objects of evaluation and the expected results (**Figure 2.3).**

1. Classical case. This control case analyzes the actual situation.

Purpose: to have competences, to control acquired professional competences. Demonstrate understanding and theoretical knowledge of the learner's understanding of the nature of independent work tasks is a purpose of classical case as well.

Case Contents:

1. Themes of the theoretical section in order to know to solve the task.
2. Unofficial assignment of tasks in Biology.
3. Suggested solutions
4. Requirements for the solution form

Expected result: a list of acquired competencies. This type of case involves the control of professional competences acquired during the independent work of students in Biology.

Control cases	**Classic**	Aim	Acquire competence
		Result	The list of competences
		Evaluating	1. To do the task
			2. Provide feedback
			3. Self development
			4. Written report
			5. The logic of the statement

			6. Conclusion
	Educational	Aim	Independent learning of the theme
		Result	To acquire knowledge, skills and abilities
		Evaluating	1. Selection of knowledge source
			2. Summarize the material
			3. Teamwork skills
			4. Execution of the assignment system
			5. The ability to work independently in a modern software environment
	Final control work	Aim	Assessment of knowledge and skills
		Result	Sum of competence scores
		Evaluating	1. Presentation
			2.To set a problem
			3. Select sources
			4. Informational and logical model
			5. The way of solution
			6. Answers to the questions

Figure 2.3. Types of control cases interactive method of knowledge evaluation based on application

2. Case study - control over the development of new material.

Objective: To study the new material independently, to control the degree of formation of cultural competencies.

Case Contents:

1. References to theoretical materials.
2. Interactive tasks of self-examination.
3. References to methodical instructions for implementation of the algorithm for solving tasks, tasks for solving typical problems.
4. Solving interactive tasks and tests.
5. Presentation of work results.

Expected result: independent acquisition of knowledge and skills.

The teacher supervises the student's ability to work with new information, the ability to prepare a brief description of the literature, the extent to which he has acquired the conceptual, logical analysis methods, the program implementation of the given task, and the test methods used.

Case can be done individually or in a small group of two or three people. At the same time, they should clearly indicate the size of each student based on the tasks performed. The results of this case will be reported either in writing or in public [49; 124 b].

In evaluating written reports, it is important for students to know how to select the most appropriate sources of information, to analyze and process them, to apply new knowledge in solving problems.

Presentation of the case in public or in written form requires the following requirements: the level and validity of the theoretical material used in the implementation of the assignment; choice of task solving method; performance of task effectiveness assessment; how the algorithm's implementation code is written and how the setting is performed; offering alternative solutions; the validity of the conclusions.
These requirements will be communicated to all students at the appropriate case.

3. Final case. This type of case is used as a measure of the competence of the trainee. Case control reflects the complex picture of the competence of the trainee.
The final control case may be presented in two variants: either a case study evaluation, or a case study, such as a case study.

In the first case, case management can be used as a checkpoint with a set of case management rules. Such rules may include all criteria that a teacher considers important, such as the following: list of levels of readiness, the extent of coverage; level of independent work of the student; quality of presenting work results.

In the second case, the case may be assigned as a task or as a substitute for a traditional exam ticket.

An interactive method of evaluating students' competences and knowledge based on the proposed control case studies can be used at the current, intermediate and final control stages. Current assessments help guide the process of mastering a particular topic; an interim assessment allows the student to record progress; final assessment is the ability to summarize student achievements in science.

Thus, the use of information resources for independent learning of students in biology, the use of case-technology to control their knowledge and skills assessment, and the implementation of both teaching and evaluation of the results in a single method. This, first, encourages students to study the material independently; secondly, it provides students with a comprehensive demonstration of theoretical and practical skills they have acquired. For teachers, it provides a motivated and well-grounded assessment of student competencies, as well as a more flexible and faster record of each student's work.

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