



## **DEVELOPING COMPETENT APPROACH OF STUDENTS BY IMPROVING TEST ASSIGNMENTS.**

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<b>Article history:</b>	<b>Abstract:</b>
<b>Received:</b> July 8 <sup>th</sup> 2021 <b>Accepted:</b> August 8 <sup>th</sup> 2021 <b>Published:</b> September 22 <sup>th</sup> 2021	The article gives insights about developing a competent approach by students by improving test assignments. And also, it indicates ongoing research with respect to assessing the quality of biology teacher education. Thus, tests in the teaching of natural sciences and assessing students' knowledge have been learnt.
<b>Keywords:</b> Natural sciences, test, assignment, assessment, knowledge, ability, monitoring knowledge, competent approach	

### **INTRODUCTION**

It is clear that, testing knowledge was first used in 1864 in the United Kingdom by J. Fisher to test students' knowledge. The theoretical foundations of the tests were later developed by the English psychologist F. Hamelton. Tests were originally developed within the science of psychology. At the beginning of the twentieth century, in the development of tests, natural sciences directions began to separate independently. Pedagogical tests were first conducted by an American psychologist created by Thorndike. The development of tests in psychology and pedagogy also required the use of mathematical methods. These methods, in turn, had a positive effect on the development of tests. In the late 19th and early 20th centuries, the use of tests as a means of assessing students' academic ability became more widespread. It was during this period that two main areas of testing began: the development and use of tests to determine the level of mental development, and the development and use of pedagogical tests to assess students' reading skills and knowledge. Test developers have found that response times are not the same in different people, which leads to the need to study people's mental abilities and the need for practical work on how to create different levels of tests.

The main purpose of the test is to inform the teacher about the level of mastery of the lessons, the volume of lessons to be studied in the queue, and to help the teacher choose a teaching method.

### **MATERIAL AND METHODS**

Attempts were also made to divide the tests into groups by analyzing different ways of assessing students' knowledge. In his monograph "New type of testing", Ch.Green (1926) analyzed the advantages and disadvantages of tests previously developed and used and made the following recommendations:

- clearly define the volume of material to be

tested and identify the most important parts of it;

- to determine experimentally the most appropriate form of testing for this material;
- determine the duration of the test, taking into account the practical data on the average rate of response of students during the test;
- check the correctness and logicity of the language in which the ideas are expressed in the tests;
- placing tasks in ascending order of complexity, avoiding the constant exchange of correct and incorrect answers.

In addition to, Ch. Russell continued to study the test results and was able to answer the question about the purpose of the test. According to Russell, the purpose of tests is not limited to assessing students' knowledge or determining their level of intellectual development, and the tests can be used to: determine from what material to study; when dividing students into groups; in anticipation of difficulties in the learning process; it can also be used to compare the achievements of students of a certain age group in educational institutions in different regions of the country.

It is important to note that it is illogical for the American Association of School Principals to teach without testing, to think only about the feedback from control to learning, and then to know what direction to take. It is known that In 1989, the French Parliament passed a law on the main directions of education development. In particular, it provides for the mandatory training of teachers in the method of fair assessment of students' knowledge: without this training, since 1992, teaching in France has not been allowed. Interestingly, France is a country with a ninety-year tradition of testing.

The mass use of testing to objectively evaluate human achievements has created a testing industry



and a testing market in economically developed countries. In the United States, more than four hundred centers are developing a variety of tests in competition with each other. Also, good skills in designing and applying tests are highly valued. In 1992, they were ranked No. 8 on the list of the 20 most influential industries in the United States. In terms of highly valued systems, analytics, marketing, healthcare, ecology, food distribution, and computer technology specialties are ranked 15-20, respectively. Tests in the teaching of natural sciences are a promising way to assess knowledge. Its advantages are:

- Test assignments cover the main content of the subject (the exam ticket covers only 4-5% of the controlled study material);
- All students answer the same test questions, which allows them to compare their knowledge;
- Criteria for fair assessment of students' knowledge will increase;
- Allows students to assess their knowledge in a more accurate and differentiated way using a pre-created scale, which is the same for everyone in the test control (rating);
- The teacher spends less time monitoring students' knowledge;
- Conditions will be created to measure the level of knowledge and the ability to increase knowledge at any time;
- Test control is easy to computerize (automate). This is one of the main advantages of pedagogical testing. This is where the repetition of the learning process comes into play.

The literature describes the following forms of such test assignments:

- closed assignments with the only correct answer;
- Closed assignments with several correct answers;
- open assignments consisting of one word (or words) omitted sentence;
- Tasks to determine the correct sequence;
- Tasks to determine the interdependence (compatibility);
- Tasks to determine the depth of knowledge in certain disciplines;
- Tasks for filling in the number, which requires determining the method of finding the series of numbers and defining it in a certain order;
- Tests to identify conflicting relationships;
- Tasks aimed at solving problems (mathematical, physical, etc.);
- Tasks to understand drawings and diagrams;
- Tasks to determine the ratio of forms;
- Tasks to determine the level of assimilation of the received information;
- Tasks to distinguish synonyms and antonyms;
- Tasks on analogy;

- Tasks to understand the text read;
- instructions on execution of instructions;
- Tasks to determine knowledge;
- tests to determine thinking;
- spelling tests;
- Assignments on language issues, etc.

## **RESULTS**

Nowadays, the focus is on assessing students' mastery through tests, but now it is intended to assess not only the knowledge of students, but also the competencies that are being formed.

According to the current regulations, the assessment of students' knowledge was based on the criteria of positive assessment from the bottom up. That is, in the "5" system, each point ("1", "2", "3", "4", "5"), each opportunity of the student was taken into account. Please note that there is a list of options for each score. Opportunity means that the student is able to master, prepare for the lesson, keep a notebook, diligence, participation, propensity for additional tasks, be able to analyze relevant information, work independently and defend their point of view, the lesson and actions such as setting an example in extracurricular activities. In order to develop this idea, the following approach can be recommended in the description of the student's ability to score each point ("1", "2", "3", "4", "5"): "1" point - 1 out of 5 opportunities. In terms of the science competence that needs to be formed in the student: the phenomena studied on the topic, the principles and their differences, the similarities are taken into account when trying to answer, even if they perform the tasks incorrectly.

Competence in working with information. Available information resources (internet, television, radio (audio-video recording), telephone, computer, e-mail, etc.), inability to work with simple documents encountered in everyday activities.

Self-development competence. Lack of desire to develop physically, spiritually and spiritually, inability to properly assess their own behavior, the help of others in solving problems encountered in everyday life on the basis of what they have learned. rely on. Socially active civic competence. Lack of knowledge of civic duties and rights. Ignorance of events, happenings and processes in the society, lack of sense of belonging are taken into account.

National and intercultural competencies. It is difficult to understand and interpret the concept of "homeland", the lack of affection in relationships, the ability to be influenced and relatively understood by works of art and works of art, not always following the same rules of etiquette. Mathematical literacy, knowledge and use of scientific and technical innovations. Attempts to create personal economic plans based on simple calculations of daily needs, ignorance of science and technology are



taken into account. If the student has the specified competencies, he / she will be considered to have used one of the given opportunities and will receive scores.

It is recommended to use closed (one or more correct answers), open, conformity and correct test assignments when creating test assignments in special (general technical) subjects. At the same time, it is advisable to create invariant tests to determine the achievement of the same learning objectives using different test tasks.

Open assignments. If the text of the test task, its key words or phrases are omitted, such task is called an open (incomplete) test. In this type of test, students are expected to give a short, clear answer of one or two words. This should be stated in the accompanying test guide. The space required for the answer is left in the blank space of the form. For example, the term "test concept" was first used by \_\_\_\_\_ in \_\_\_\_\_.

Closed assignments. This task consists of a question and several answers, one of which is correct and the others are similar but incorrect. The number of suggested answers can be from two to five and more. Depending on the test taker's chosen answer, the test assignment is coded with two appropriate codes: 1 or 0, and then entered into the electronic information center.

1. Fairness of knowledge control by testing in comparison with traditional forms:

A) increases. B) decreases.

2. The type of control that allows you to assess the increase in knowledge at any time interval: A) normal B) test.

Special emphasis should be placed on closed-ended test items with two "yes" and "no" answers. Some tasks can be described in such a way that their answers have two different meanings.

For example: Do you like tests? - Yes (I like it). No (I don't like it). In such cases, it is advisable to use the words "correct" and "incorrect" for the answers.

For example: Closed test assignments make it easy to control knowledge using a computer. A) That's right. B) Incorrect.

The main task of using closed-ended assignments with two answers is to quickly check the level of knowledge of the subject in the first test assignments in this subject. In Automated Learning Systems (AET), such tasks allow for an approximate assessment of a student's overall readiness at an early stage and to address the next area of learning - a complex or simplified program. The more answers you have on a test task, the less likely you are to find the right answer by chance. In practice, it is sufficient to have assignments with five answers (in which case the probability of answering one task correctly is 0.2). The following example can be given for test assignments

with five answers.

What is the meaning of the term "fourth dimension" in physics and mathematics?

A) By weight. B) Size. C) Time. G) Acceleration D) Acceleration.

The correct answer is: This task can be included in the list of latent tasks. The fourth dimension is the concept used in probability theory. Therefore, a test taker who answers correctly can be assumed to be "aware of the universal statement" of this theory. In closed assignments, the correct answers can be multiple or all of the answers are correct. For example: What are the characteristics of pedagogical innovation?

A. All changes aimed at improving the pedagogical system.

B. Innovation to increase the effectiveness of the educational process.

V. Replacement of some parts of the pedagogical system with other high-performance parts.

G. Utilizing the internal capabilities of the pedagogical system and achieving higher results.

D. All the answers are correct.

Correct Answer: D.

An interconnected short closed chain of tasks allows you to check the quality of mastering any complex learning material. Describing answers that appear to be incorrect but seem to be correct is a major challenge in developing closed-ended tests. If they fail, the correct answer will stand out among them, and even a student who doesn't know it well can easily find it. In this case, the task loses its checking function. For the assignment to be valid, all the answers must be engaging to the student. Only then is the test considered successful. The attractiveness of each incorrect answer is determined by the weight of the selected requirements. The higher the proportion, the better the answer. If students choose a clearly incorrect answer as the correct answer, such an answer should be replaced.

## **DISCUSSION**

If we discuss developing competent approach of students by improving test assignments, not all test items can be used at the same time. For test questions to be perfect, there are a number of requirements that must be met when compiling them. These include: the relevance of the content of test items to the learning objectives; the importance of the material; scientific accuracy; consistency; smoothness and harmony; stratified by level of mastery; efficiency (cumulative); fluency and accuracy of language; unambiguousness; strict timing; compactness; complexity standard; the absence of additional characters in the correct answer; variability; interdependence of form and content.



Let's take a brief look at each of these requirements.

1. Conformity to the learning objectives. The content of test items should be in accordance with the identified learning objectives. The set of learning objectives has a hierarchical structure according to Blum's taxonomy. Therefore, it is impossible to achieve a common (relatively distant) goal without achieving a relatively close goal. Each test question must ensure that a specific learning objective is achieved.

2. Significance of the material. The test questions should include the most important parts of the study material. The number of test items is usually limited. Consequently, not all topics may be fully covered in the issue at hand. The student's ability to deduce from the general situation (deductive) and, conversely, to draw general conclusions (inductive) from certain facts, shows how well he has mastered the application of theoretical rules in individual cases, and his ability to explain the theoretical basis.

3. Scientific accuracy. The test includes factual information that can be substantiated through observation and knowledge. It is not recommended to include controversial views in science in test questions. The nature of test items requires a well-known, clear answer.

4. Consistency. The tasks in the test should be related to a particular subject and should be interrelated in terms of the nature of the general knowledge. Consistency is seen in the relationship (correlation) of the answer to the same task to the overall test results.

5. Smoothness and harmony. It is important that the total number of tasks in the test is appropriately distributed relative to the topic and parts. This requirement should be implemented when developing a test plan.

Stratified by level of mastery. It is necessary to create test tasks with different levels of mastery of a particular component of the study material (cognition, recall, effective knowledge and creative thinking). This requirement should also be implemented in the development of the test plan. Proficiency tests are based on the retrieval of previously acquired information. Memory capacity plays an important role in this. In the tests of the reproductive level, the student thinks independently on the basis of previously acquired information, and when completing the task, he relies on the rules and algorithms (guidelines) already known in

science. In this case, he goes on to describe what he remembers. Effective solid knowledge and creative thinking test tasks test the test taker's ability to apply certain general techniques independently to the specific conditions specified in the task. Effective knowledge and creative thinking activities are not based on ready-made rules and algorithms, but on rules created according to certain rules or re-created in the process of working in new conditions. In structured tests on the level of creative thinking, the task is described in general terms, the student identifies the behaviors and situations necessary to achieve the goal as a result of creative thinking. In the process of solving such test tasks, completely new information (rule, conclusion, form, etc.) is created.

### **CONCLUSION**

In conclusion, adherence to the above requirements for the development of test items provides their ability to accurately and accurately measure students' knowledge. To do this, it is necessary to ensure the joint work of scientists, science teachers, methodologists, linguists, educators and psychologists in the development of test assignments. Thus, the development of students' competent approach through the improvement of test assignments serves as a basis for assessing students' cognitive potential.

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