



DOI: 10.54919/physics/56.2024.244ak4

Development of measures, system of assessment of learning process parameters in the secondary education system

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Abstract

Relevance. In the assessment process, correctness, logic and reasonableness of answers are the main aspects in determining a student's level of achievement. The issue of creating a unified assessment system is relevant in connection with the new challenges faced by education: COVID-19 and numerous wars, which created the need for distance learning, and this leads to difficulties in adequate assessment.

Purpose. The purpose of the study was to identify new methods of student assessment that can replace testing, and ways in which it is possible to create control over the assessment of all parameters of education.

Methodology. The study used such methods as analysis, synthesis, generalisation, and comparison.

Results. The findings showed that the main flaw in the use of testing was the incomplete determination of students' knowledge through inaccuracy and unreliability of verification. Verbal answers such as "yes" and "no" fit well into the test scoring methodology, but do not reflect the analytical abilities of the test takers. With the test method, the correct answer can be chosen at random from the five choices given and the student gains the ability to memorise the correct answer from the five choices.

Suggested Citation:

Tatenov A, Toktaugaliyeva S, Sandibaeva N, Karymbai A, Ismailova G. Development of measures, system of assessment of learning process parameters in the secondary education system. *Sci Herald Uzhhorod Univ Ser Phys.* 2024;(56):2444-2452. DOI: 10.54919/physics/56.2024.244ak4

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Conclusions. The results of the study allow identifying and evaluating the parameters of the educational process, including the ability to improve the assessment criteria. This, in turn, will enable the creation of criterion-based education in schools, i.e., the assessment of students' knowledge according to the parameters, and the quality and skills of teachers and the educational institution itself.

Keywords: student rating; criteria results; teachers; formative indicators; summative scores.

Introduction

The education system should include many key parameters that contribute to the development of science and learning for middle school, high school, and college students. Among such qualities, a significant place belongs to the assessment system, which should not only deduce the result of students' knowledge, but also show what needs to be influenced and what flaws exist in the learning process. It is important to use and implement global methods that have positively reached optimal indications in education and do not have a negative impact on students. One of the most common methods of evaluating students in high school is testing. This method has many positive qualities: speed, the ability to evaluate all students, the use of different types of buildings and scores (scales) for assessment, but also it is associated with the reproduction of educational material without the use of logical chains. Therefore, it is important to create an assessment system that will include several types of student knowledge testing: oral and written. In connection with the development of informatisation of secondary education, the question arises of how, with the help of information technology, urgent problems that have accumulated and were previously ignored, but need to be solved at the present time, will be solved.

The problem of using different tools in the assessment process was described by Y.H. Zhou [1]. It is the use of information methods that allows students to increase their level of knowledge and motivation. In addition, during the study it was brought to light that pupils and students have a low level of practical knowledge with insufficient mastery of theoretical material. This is also one of the reasons for an in-depth study of the problem of the assessment system in the education sector. The use of such methods should comply with the concept of education development of the Republic of Kazakhstan, developed during 2022-2026 [2].

In the study by B. Almurzaeva et al. [3], the scoring and rating system was described in detail, implemented using the Bologna assessment system. When using it, some positive aspects are highlighted, such as: the need to apply innovative teaching and control methods, the introduction of additional points and control over the educational process, and an increase in the level of motivation. But even when using the rating system, there may be risks associated with the inconvenience of calculating points and transferring them to the conventional system. The study by A.Sh. Zhumasheva and A.K. Zhetpisbay [4], which introduced criteria-based assessment systems in the updated educational system, showed positive indicators, since such an assessment allows us to determine the quality of education that will meet the world standard. It is worth noting that the features of the world assessment were described by E. Kolluri [5]. G. Niyazova et al. [6] described models and assessments of the development of basic competences of students, among which the

evaluation criterion is based on the ability to describe, reflection, comparison, and contrast.

Details on the specifics of using criteria for evaluating educational organisations are described in the document "Edilet". In the Republic of Kazakhstan, there is a cumulative system with criteria, which uses such main concepts as evaluation of educational organisations, evaluation criteria of educational organisations, descriptors, weighting factor. Each of the criteria has its own formula. This technology is effective, so it helps to combine all the data and correctly describe and evaluate, but it is practically not used in institutions due to the multitude of operations and waste of time to evaluate each structure and students [7].

By using control methods, including testing, it was possible to find out where flaws are made in the process of studying materials (whether the problem arose due to the activities of the teacher or through insufficient knowledge of the student), which were highlighted by B.S. Karimova et al. [8]. The author's data described the problem in context-oriented tasks that will help improve and structure knowledge in textbooks, and the story of the development of pedagogical assessment measures was described by M.B. Ibrahim [9]. Detailed information about the system of education assessment in Kazakhstan, the concepts of formative and summative assessment was described by A.T. Idilup [10]. In addition, this researcher defined the principles of assessment activities in education.

The question of exactly which components and criteria should be in the assessment system has not been sufficiently considered. This includes their positive/negative impact on the quality of students' knowledge. Therefore, the purpose of the study was to determine the assessment system that will most effectively test students' knowledge (using oral answers or highlighting causal relationships) without choosing answers on a subconscious level.

Materials and Methods

This study is empirical and theoretical in nature. This study was based on the analysis and comparison of the existing assessment system and the proposed new one. The conducted system analysis and data comparison revealed the possibility of comparing the complexity of test tasks, the teacher's pedagogical involvement, and the student's academic success on the same scale.

In order to identify the degree of satisfaction with educational services, according to the created form, an online survey was conducted among students (total number of 80 people, grades 5-9) and teachers (total number of 40 people), which allowed identifying and structuring the main errors in the assessment system. All the results could be compared with the general data and were analysed to identify problems in the assessment process. This survey included questions about the disciplines and the allocation of some information: adequate assessment, problems in

studying, whether there was enough time to master them, whether it was necessary to change the curriculum, what types of assessment were used. The list of questions answered by the students:

1. Was the form, content, system, and evaluation criteria clearly presented at the beginning of the study of academic disciplines?

2. Were the deadlines, forms of control measures and assessment criteria posted on the official website of the educational institution?

3. Were the deadlines, forms of control measures and assessment criteria provided by the teacher of the discipline?

4. Were the forms of control diverse, understandable, interesting, non-standard?

5. Was the point accumulation system clear, accessible, and transparent?

6. Was the assessment of knowledge, skills, and abilities objective and adequate?

7. Were the teaching staff carrying out argumentation and commenting on the received programme learning outcomes?

8. Name the forms of control measures that allowed you to most effectively verify the achievement of program learning outcomes.

At this stage, an analysis of the test tasks that were used in the assessment of students with mathematics (80 people, grades 5-9) was carried out. For example, in the modern education system, when studying in the second half of the 9th grade, the class is only engaged in studying and passing ready-made and created test tasks. The tests included questions to reproduce the answers and choose the right answers, and those that had to show logical and non-standard thinking. In the process of comparing student responses, a project was proposed that offered a continuous method of evaluating oral responses and written papers in three sections in one quarter. In additions, essays and individual assignments of each student were used throughout the educational process instead of a one-time oral method of testing for final exams in the classroom.

In the course of the study, the criteria for assessing institutions, teachers' activities and students' knowledge were described and compared. The level of activity of the educational organisation was determined by the total score of the assessment criteria from the primary assessments of the testing methodology. Based on the results of the current assessment, internal and external certification was carried out, and the issuance of licenses, certifications, and accreditations to educational institutions, the issue of manuals (methodological manuals) for administrators and teachers of secondary schools, features and types of assessment.

The assessment for the semester was made by calculating the average between the percentage of formative and summative assessment: The percentage of semester assessment – 50% of formative and 50% of summative assessment ($(69+54)/2=62\%$). In the course of the study, formative and summative assessments were formed, which were based on the use of criteria. The final stage of the study was to determine the grades of students' academic performance. A system of calculating the average score for students was carried out in accordance with the conventional and trial assessment. No matter who

gave the grade: a teacher, a student, or another person, the above-mentioned method of rounding the final grade always gave a clear answer to the question.

Results

One of the structural elements of education that needs to be improved is grades and their number. The existing assessment system uses the same scales, but only the results of one-time test assessments are taken into account here – for licensing schools, certification and accreditation of educational organisations, criterion assessment, and student certification conducted by the Testing Centre of the Ministry of Education in grades 4, 9, 11.

In the process of investigating this problem, some concepts were defined that were used as a result of evaluating students. They included the rating of all students (characterises the place of the subject in a group with similar indicators), the rating of students (based on the sum of all student grades), the planned student rating (the planned sum of all student grades, provided that they are equal "5"), the teacher's rating (equal to the sum of their grades), and the task rating. Thus, the level of academic performance (student rating), the level of pedagogical activity (teacher rating) and the level of task complexity (task rating) can be chosen as the main parameters of the educational process. As a result, it is possible to create a management system based on the above-mentioned rating, which allows maintaining the limitations of the educational process at a certain level. To do this, it is necessary to develop banks of test tasks by difficulty levels for all disciplines, each class, and the entire educational institution. In the course of the research, a questionnaire was conducted on the state and attitude of students in grades 5-9 to the system of assessing their knowledge. The result (Table 1) showed that 80% of all students have no idea about the assessment criteria, and 75% claim that they are not assessed in a standard and objective way.

Table 1. Results of the survey of students in grades 5-9

No.	"Yes"	"No"	"Not always"	"Do not know/partially yes"
1	65%	25%	10%	-
2	90%	0%	10%	-
3	61%	27%	-	12%
4	45%	11%	15%	29%
5	48%	45%	-	7%
6	39%	20%	41%	-
7	36%	39%	-	25%

Source: compiled by the authors.

Also, the students provided an extensive answer about which forms of control measures, in their opinion, most effectively check the achievement of program learning outcomes. 60% of students believe that using didactic flashcards using correspondence tasks and determining values is an easy and interesting way not only for assessment, but also for preparing for classes. Among 25% of the respondents, an oral answer was highlighted, 10% – an essay, and 5% of students consider testing to be the most effective assessment method.

When creating a bank of test tasks by degrees of complexity for subjects such as mathematics, physics,

computer science, and humanities based on information technology, to measure ratings and for rating meters, it is necessary to fill in several items. Educational and calendar plans for all subjects must be developed in accordance with scientific and pedagogical requirements and principles. The educational and control sections should be marked in the calendar plan. To form a bank of verification works by difficulty levels, the required number of verifications must be calculated for each type of control section. Tasks and questions should be selected for each control section according to the degree of complexity. A computer database of tasks should be created, considering variability, difficulty, and parallelism. The approximate necessary volume of work in mathematics for methodical support of one class for each pupil in the cut-off annual, semi-annual, and thematic sections within one topic includes controlling and training types. Within all topics, this totals 190 tasks. If the number of pupils in one class is 30, the total number of tasks needed is 5,700. Texts of test tasks and their answers are placed in the database of methodical support, the software and organisational structure of which has already been created by programmers.

Visualisation of complex concepts through computer modelling of complex processes of physics, chemistry, biology and computer science based on information technology is crucial for improving the quality of education. Based on the conducted research, aggregated questions and answers are offered. Automation of the process helps to relieve overloaded students, free subject teachers from paper reporting, and improve the quality of education through the use of virtual interactive laboratories, which reduce the teaching time of the subject by about 60%. But the interaction with the educational material was supplemented by the active involvement of the student in changing the current process of studying topics in physics, chemistry, biology, computer science (virtual interactive lesson technology, multimedia support for particularly complex topics, virtual laboratory work on natural science subjects). There are several sub-criteria, namely [11]:

1. Criteria for evaluating educational institutions are a set of normative documents and acts that are used to determine the quality of evaluating the activities of educational institutions.

2. Evaluation criteria are a set of meters and qualities that evaluate the educational achievements of students.

3. An educational programme is a normative document that shows the goals, results, and content of learning, methods and adaptations, the structure and organisation of the educational process, and evaluation criteria.

4. Comprehensive testing – with the help of information and communication technologies, comprehensive control is carried out simultaneously in several disciplines.

5. Learning outcomes are assessments confirming the totality of skills, knowledge and skills that students have gained in the process of studying this discipline.

6. A curriculum is a document that contains a list of the content of an educational discipline (by modules/hours), types of educational activities and forms of control.

7. The rating scale, which is used in complex testing based on the created criteria (“excellent” – corresponds to 85-100%; “good” – corresponds to 65-84%; “satisfactory” – corresponds to 40-64%; “unsatisfactory” – corresponds to less than 40% of the correct answers from the number of questions of the examination material), the results of complex testing are compared on a five-point scale a system without the possibility of appeal.

8. According to Decree of the President of the Republic of Kazakhstan No. 636 “On approval of the National development plan of the Republic of Kazakhstan until 2025 and invalidation of some decrees of the President of the Republic of Kazakhstan” [11] (registered in the Register of State Registration of Normative Legal Acts under No. 29031) if at least 40% of the students from the list of the contingent answered the questions at least “satisfactorily”, then they are considered to correspond to the level of training of the students.

Analysing the assessment scale, it should be noted that the 100-point and 10-point scales used in the education system are eventually compared with the old five-point assessment scale, and only 4 points are used from the five-point scale (2, 3, 4, 5) [12]. In the process of conducting a comparative analysis between the global internal and external assessment in schools and the experience of Kazakhstan, it was determined that the most progressive method of internal assessment is at the Nazarbayev Intellectual School (NIS), which uses a 7-point scale of assessments [12-18].

For example, in the 11th grade, the grade is set as follows. The assessment system in NIS, compared with the one-time assessment of the test method, is more complete and equivalent, as can be seen from the table above, it has two control sections: the number of formative tasks is 4, the number of summative tasks is 3, in total 7 tasks per semester. This is a fairly effective assessment method, however, it does not have gradation by levels of complexity of tasks, and all tasks are not combined into a single bank of test questions by levels of complexity of tasks, by grades and quarters of secondary schools, but are intended only for elite NIS institutions. This is not applicable for external assessment of secondary schools, and there is no consistency between the mechanisms of internal and external assessment in schools. NIS uses computer testing as a basis for internal and external assessment, licensing, certification, and accreditation of educational organisations, criteria assessment and student certification (Table 2, 3).

Table 2. Formative assessment

	Task 1	Task 2	Task 3	Task 4	Total number of points	Percentage score
Possible points	Max. 14	Max. 24	Max. 13	Max. 7	Max. 58	
Points achieved	13	17	3	7	40	69%
Final percentage formative assessments=total points achieved/total possible points ((13+7+3+7)/(14+24+13+7)=69%)						

Source: compiled by the authors.

Table 3. Summative assessment

	Task 1	Task 2	Task 3	Total number of points	Percentage score
Max. possible points	55	50	90	195	
Points achieved	29	31	46	106	54%
Final percentage formative assessments=total points achieved/total possible points ((29+31+46)/(55+50+90)=54%)					

Source: compiled by the authors.

The assessment of students' entrance exams serves as the main basis for internal and external assessment of educational organisations. The disadvantage of the test assessment is an incomplete and unfair assessment of knowledge. The test method is well suited for oral answers such as "yes" and "no" and is used in the assessment system, but it does not accurately determine the student's ability to solve problems, derive formulas, perform individual tasks or write an essay.

Instead of the method of single oral testing at the final exams in grades 4, 9 and 11, this paper proposes a continuous method of evaluating oral answers and written works in three sections in the quarter, essays, individual assignments for each student, and throughout the entire educational process. As a result, the regulations of the NIS receive updates and new provisions. Instead of using a single method of oral testing at the final exams, in the 4th, 9th and 11th grades, the scientific and methodological basis of the NIS should now be the method of evaluating oral answers and written works in three sections in one quarter, essays, and individual assignments for each student.

The international Coursera platform has also opened access to its courses, and the ZOOM service has provided free access to classes. The digital platforms Bilimland, Google Classroom, Daryn.online are more suitable for the secondary education system for the use of mechanisms and results of internal and external assessment based on digital platforms. The platform The Universe is intended for use in universities. Currently, the secondary education system of the Republic of Kazakhstan uses a five-point scale to assess students' knowledge, despite the fact that modern educational institutions use a ten-point scale, which is again tied to a five-point scale. The current system processes, analyses and evaluates learning outcomes. For classroom teaching, the following method of output of the final grade is typical.

Suppose a particular student has the following journal grades: 2, 2, 4, 4. Then the final grade, according to the ingrained tradition of teachers, is equal to the arithmetic mean: $(2+2+4+4)/4=3$. If a 2 is a knowledge score of 0, then the arithmetic mean score of 3 is inaccurate. The correct final conclusion of the assessment is the following: $(0+0+4+4)/4=2=0$. The practice of considering final grades adversely affects the motivation of students. The opportunity to correct their "2" was given to the whole class. Despite this, two students who had grades (2, 2, 4, 4) decided not to use this opportunity, since the final score was predicted as a "3". It was a surprise for them to learn

that they received a "2" as a final grade, and not a "3". Their subsequent actions were very clear: carefully planned, the students changed their grades to "excellent". As a result, the final assessment was as follows: $(5+5+4+4)/4=4.5$.

The final score of "5" was obtained after rounding, which consists in adding 0.5 to the result (4.5 points). Arguments like "The student had '2' before, so out of the possible final grades (4, 5), a grade of '4' would be chosen" or arguments like "The student showed will at the end, prepared well for this topic and therefore deserves a grade of '5'" should not be allowed. Subjectivism is the result of these evaluation techniques. No matter who gives the grade: a teacher, a student, or another person, the above-mentioned method of rounding the final grade always gives a clear answer to the question: $(5+0)/2=2.5$. And the teacher can enter either "2" or "3" if the previously specified method of rounding the received grade is not used.

The most contradictory reality is that every teacher believes that there are established standards for final grades, and strictly adheres to them. In order for anyone, including a student, to look at the lesson log and be able to calculate and get an accurate answer to the question: "What is their current academic performance?" or "What is the expected result?", it is necessary to create a guide for determining final and current assessments. The student's activity decreases until they know their specific grade. It is important to inform the student about their current academic performance in a timely, accurate, and objective manner. The student has a large reservoir of motivated behaviour that can be activated. The student's right to repeat any topic to get a higher score is one of the fundamental ideas that still needs to be implemented. It should be emphasised that in order to bring this theory to life, it is necessary to change the guidelines for keeping a diary in the classroom. The amendment "2" should be "crossed out" in some way and then ignored.

For example, two students have the same grades (5, 5) and (4, 4, 4, 4). Assuming that the second student got grades on the test papers, and the first one – on the oral surveys, as a result, the first student will receive a higher grade than the second. The importance of the type of verification work in this case is not considered, as the number of completed tasks. The appearance of "3" is the result of ignoring the importance of the type of verification work. Thus, students cannot afford to miss a test due to "illness". When the final grades are added up in front of them, the teacher is, in fact, helpless. It is difficult to discuss the objectivity of the final results when one student gets 8-10 grades in a quarter, and the other gets only 1, and sometimes does not get any at all. In this case, the rule is grossly violated: all students should have several options. The most important element of the assessment system for all school subjects is a bank of test tasks according to the degree of complexity, according to which measurements of all types of grades are carried out.

Twelve creative projects of varying degrees of complexity make up an individual creative task. Degrees of difficulty are used to evaluate learning based on the test tasks collected in the bank: assessment of academic performance; assessment of student's academic performance should be measured by a rating method. This

includes the student's knowledge and skills, the volume and amount of work performed, the significance of the test work, the complexity of the test work, the number of missed classes, and the number of missed control sections. It also considers participation in work related to duties in the classroom and at school, participation in Olympiads, and the result of the Olympiad.

Discussion

The main parameters of the educational process in a modern secondary school depend on the development of assessment systems. The study by E. Kolluri [5] provides the following approach: effective teaching can be defined in many ways, including teacher behaviour, teacher knowledge, teacher beliefs, etc. Improving academic performance is a sign of effective teaching. This helps the teacher understand how to start the learning process, how to encourage students and how to help them memorise or learn the material. Thus, teachers can better direct students' abilities. An activity or procedure that involves providing everything that is evaluated by a numerical index is a measurement of the level of education. Comparing with the results of the study, it can be said that the use of oral assessment of students allows students to develop the ability to immediately solve problems and answer a question.

A study by Newsweek Staff magazine provides the opinion of parents of students in the United States of America about assessment systems [19]. And a study by T. Isaacs [20] considered the University College London, which has a unique assessment system. According to the findings, most students do not understand the assessment procedure and do not know exactly what form the teacher uses, so the use of the English assessment system can be taken into account. The paper also described and discussed assessment issues that highlight the role of government and its agencies in the design, implementation and monitoring of tests and qualifications for the National Curriculum of England for 14-19 years to illustrate the relationship between curriculum development, assessment, and policy. Based on this, it can be concluded that it is necessary to introduce a unified educational assessment system for the whole country, which will be connected with foreign practices.

The study by G. Lichand et al. [21] described the impact of coronavirus on educational activities and difficulties in evaluating students, since in most cases it was conducted in a remote format, which made it difficult to conduct an objective assessment. This resulted in a 365% increased dropout risk in distance learning. The average scores of standardised tests decreased by 0.32 standard deviation, as if students had learned only 27.5% of the full-time equivalent in distance learning. Learning losses did not systematically increase depending on the activity of the disease, which indicates that they are the result of distance learning, and not the result of other medical or economic consequences of COVID-19. According to this study, it is worth noting that during the pandemic, the testing method was often used, which biased students, since the latter had the opportunity to use the help of parents or improvised educational materials. Comparing the results of the researchers with the current study, it is possible to notice a tendency of negative attitude towards

test tasks, including the thoughts and attitudes of the students themselves.

T. Susnjak et al. [22] conducted an analysis of modern approaches to creating information panels for learning analytics (LA). The study showed that most LA dashboards use only descriptive analytics at a superficial level. With the help of new analytics tools, it is possible to allow students to adequately interpret the behaviour of the predictive model, or rather to understand how the predictive model comes to a particular forecast. It is worth agreeing that the use and development of interactive research methods in practice allows for a more loyal and qualitative assessment of students' knowledge, including the use of criteria-based assessment.

In the educational process, the widespread use of computers and information technologies has led to the interactive development of education. The interactive form of education is developed with the integrated use of not only a computer, but also electronic television. In the interactive way of learning, the use of multimedia technologies is very expensive, but they provide visibility. Information computer technologies of programmer training expand the analysis of the educational process, which is advisable when using general principles in targeted training consisting of theoretical foundations. According to the curricula and the discipline programme, the student's classroom and independent work are regulated, which are conducted in accordance with the curriculum and are conducted by leading lectures, seminars, laboratory work, colloquiums [23].

According to the conducted research and their results, in order to improve the quality of knowledge and skills in the modern world, it is difficult to do without the use of technology. But at the same time, it is necessary to introduce an interesting study, which will be facilitated by a criterion assessment (which analyses not only the quality of students' knowledge, but also the skills of teachers, interactivity and creativity, the possibilities of the institution to use new methods). The purpose of the study by E. Ningrum [24] was to describe the assessment of the learning system at the seminar "Subject pedagogy" at Pendidikan University in Indonesia. The study used a descriptive method, the variable was the learning system and indicators of the implementation of Subject Specific Pedagogy, a seminar on teaching principles, collegial teaching, and supervision at school.

The main result of the study by T.V. Hung et al. [25] was necessary for teachers to use formative assessment using information and communication technologies to control student learning outcomes. In addition to involving students in formative assessment through learning activities, video lectures and lessons can be integrated into an online learning system to help students conduct self-assessment to develop their learning skills. In order to achieve learning objectives, teachers need to pay special attention to mechanisms that contribute to creating a supportive learning environment in which each student values mutual support or personalisation of learning. To help students take full advantage of the results of self-assessment, teachers need to consider the activities and processes that motivate students to create an educational environment, which is reflected in the results of the study. It can be agreed that testing allows quickly evaluating all

students in a short time, but does not have the ability to assess high knowledge in a particular area, since only oral answers or writing essays help to find out the causal relationship.

The results of the study by E. Susilawati et al. [26] confirm the assumption that assessment systems based on digital technologies and trust in them significantly affect the personality of students. In addition, the personality of the student is of great importance for improving academic performance. In conclusion, it should be noted that the student's personality plays the role of moderator.

Implications for research and practice: This research is useful for government agencies and academic decision makers in developing methods for shaping the personality of students. In addition, this study contributes to the development of a plan to improve academic performance in the higher education sector. That is, it is important in the assessment process to create a structure that will evaluate students in the best possible way, or rather evaluate their knowledge and skills without guessing or subconscious knowledge, which is typical in the process of using testing.

Conclusions

The modern education system allows diversifying and introducing different methods of teaching and evaluating students based on situations and necessities. The coronavirus situation has clarified the main flaws in the field of education, including the frequent use of testing methods as the main method of assessing students. It should be noted that this method has not had a particularly positive effect on the quality of students' knowledge lately. This is due to the constant "memorisation" of the material by students without understanding it, or guessing the correct answer among the four. The study considered a structure that allows mainly using oral answers or essays in priority, but not test tasks. They allow students to evaluate the educational material qualitatively, ask leading questions and develop the ability to think, correctly coordinate sentences, and be able to look for causal relationships.

In addition, it was important in the study to find ways to evaluate and grade teachers who use the old point

transfer systems and assessment criteria. It is important that, by allocating the arithmetic mean for the student, all the qualities of the student are characterised. Therefore, it is so important that when a student receives a "2", they should be motivated to retake the course material for a higher grade, through the availability of ratings and the need for a higher arithmetic average in the subject. In addition, it should be noted that one of the goals of education should be the compilation of national banks of test tasks in all subjects of secondary education, which contain huge amounts of data. When compiling a bank of test tasks for each subject, the level of complexity of each test task and the list of questions are considered. For these conclusions, data from the bank is used: student ratings, teacher ratings, difficulty ratings of exam papers and questions. Based on these ratings, the ratings of the class, school, district, region, and country are formed. Next, the ratings of the class and the school are formed. It is important to note that further research should include the characteristics and complexity of the types of tasks to test students' knowledge.

The use of criteria-based assessment allows resolving contradictory attitudes to assessment, since it provides objective information about the results. In the process of implementing this method, it is possible to increase the motivation of students, their involvement, and responsibility. It is also possible to develop those tools that will most effectively influence the development of high skills and focus on integration. An important component in the assessment process is to identify 2 forms: the formative criterion and the summative criterion. The implementation of criteria-based assessment using its entire structure requires further investigation.

Acknowledgements

There are none.

Conflict of Interest

The authors declare the absence of conflicting interests.

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Розробка заходів, системи оцінювання параметрів процесу навчання в системі середньої освіти

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Анотація

Актуальність. У процесі оцінювання, правильність, логічність і обґрунтованість відповідей є основними аспектами визначення рівня успішності учня. Питання створення єдиної системи оцінювання є актуальним у зв'язку з новими викликами, які постали перед освітою: COVID-19 та численні війни, які породили потребу в дистанційному навчанні, що призводить до труднощів адекватного оцінювання.

Мета. Метою дослідження було виявлення нових методів оцінювання студентів, які можуть замінити тестування, та шляхів, та за допомогою яких можна створити контроль за оцінюванням усіх параметрів навчання.

Методологія. У дослідженні використовувалися такі методи як аналіз, синтез, узагальнення та порівняння.

Результати. У дослідженні визначено, що основною вадою використання тестування є неповне визначення знань студентів через неточність і недостовірність перевірки. Такі вербальні відповіді як “так” і “ні” добре вписуються в методологію оцінки тесту, але не відображають аналітичних здібностей учасників тестування. За допомогою тестового методу правильну відповідь можна вибрати випадковим чином із п'яти запропонованих варіантів, і учень отримує можливість запам'ятати правильну відповідь із п'яти варіантів.

Висновки. Результати дослідження дозволяють визначити та оцінити параметри навчального процесу, зокрема можливість вдосконалення критеріїв оцінювання. Це, у свою чергу, дасть змогу створити критеріальну освіту в школах, тобто оцінку знань учнів за параметрами, якістю та кваліфікацією вчителів і самого навчального закладу.

Ключові слова: рейтинг студента; результати критеріїв; вчителі; показники формування; підсумкові бали.