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MECHANISM FOR ASSESSING THE QUALITY OF TEACHING IN A HYBRID LEARNING FORMAT

Abstract

The article is devoted to the analysis of the theoretical provisions of pedagogical research on mechanisms for assessing the quality of teaching in a hybrid learning format. The purpose of this study is to describe the features of methodological approaches to assessing the quality of teaching in a hybrid learning format in relation to the educational process in higher education. Research methods: The assessment of the quality of teaching was determined by the assessment of the quality of educational technologies (content of lectures and practical classes). Through the structure of evaluation of educational results as the quality of learning of students in the curriculum. How to evaluate the quality of education: subjective self-evaluation of teachers and objective evaluation of students through surveys and questionnaires. The resulting research results made it possible to demonstrate the theoretical and methodological basis for modeling the university's hybrid educational environment. It became clear that the main provisions of the analysis and determination of the quality of education are the constancy of the signs of the quality of education and the component composition of the professional activity of the teacher in the university. The level assessment of the expression of each quality attribute in the analysis of educational activity is determined. The structure of educational evaluation is represented regardless of the details of the subject and the content of the discipline. Indicators for assessing the quality of education in an organized, hybrid learning format include immutability, monitoring, intercommunication, polymorphism, self-deviation, personalization, feedback, etc.

Keywords: hybrid learning, educational technology, teaching quality, objective assessment, assessment standards.

Basic provisions. Our research has led us to establish several key points: the mechanisms and indicators for evaluating teaching quality in a hybrid learning format have not yet been comprehensively addressed in existing literature; enhancing the training of future teachers for hybrid learning environments necessitates the integration of psychological components to ensure lasting effectiveness; the assessment of teaching quality should incorporate the principles of invariance, intercommunicativeness, multi-faceted approach, personalization, consistent feedback, and reflective practice. Furthermore, hybrid learning models and distance education have become increasingly prevalent, making effective collaboration between educational institutions and families a crucial factor in delivering quality education. The challenges facing parents and educational institutions in this new paradigm are complex and diverse, as highlighted by

our theoretical research models and data analysis. Addressing these challenges requires innovation, adaptation, and the integration of technologies alongside interdisciplinary approaches. Pedagogical support for parents should be viewed as a long-term investment in children's futures and the educational system as a whole, with successful implementation of support strategies necessitating the involvement of all stakeholders, from teachers and administrators to government agencies and public organizations.

Introduction. The fact that hybrid learning makes an undeniable contribution to accelerating the formation of the educational process of the "new generation" is a given. Having initially received widespread use as a synonymous concept with blended learning, today hybrid learning, both in English and Russian literature, retains a broad understanding like any combination of contact (face-to-

face, in-person) teaching synchronous and asynchronous learning formats.

With the development of technology, especially the possibility of teaching students online in synchronous mode, B. Managing proposed a special understanding of hybrid learning as a combination of contact classroom and synchronous learning in a virtual environment (virtual synchronous).

The synchronicity of interactions, which creates opportunities to interact with students at educational events, is positioned as the main feature of synchronous hybrid learning. It is due to real-time synchronization that hybrid learning differs from mixed learning, which can include both synchronous and asynchronous activities.

Thanks to modern information technologies, today it is possible to use new forms of presenting material, which improves the communication policy of an educational institution within the framework of communication and interaction between participants in educational processes. It is the use of digital platforms to organize the educational process that is the basis for the introduction of hybrid learning.

Materials and Methods. The productivity of hybrid learning, according to foreign scientists, lies in the fact that:

1. Hybrid learning is an innovative model using information and communication technology, containing various technologies including television, computer media, multimedia presentations, iPhone, video conferencing and weblogs. (Aristika et al., 2021).

1.1 Integration of synchronous learning on Cisco Webex, Google Class, Panopto and asynchronous sessions platforms. The latter is a mobile learning module with self-learning content provided (Cheung, 2015); (Metis & Våljataga, 2021).

1.2 Students taking initiative and gaining practical experience with explanations of abstract digital technologies. The demonstration of a video with a clear algorithm for future work activities activates a creative approach to the mechanism of communication technologies (Wardani et al., 2018).

2. Hybrid learning is a productive pedagogical approach that prioritizes technological

developments and can provide experiences using hybrid spaces (Chen & Chiou, 2014).

3. Hybrid learning is an innovative model for the development of critical thinking based on modern technologies (Aristika et al., 2021).

Sadirbekova (2023) confirmed the effectiveness of the hybrid model in their studies, in which hybrid learning can provide a consistent experience through the use of high-order thinking critical thinking technologies.

Due to the rise of the “hybrid learning space”, the content of educational programs and disciplines is delivered using a combination of conventional seminars and electronic means of communication (Alamri, H. A., Watson, S., 2021).

B. Tomlinson and C. Whittaker (2012) considers hybrid learning as a pedagogical approach that combines offline and computer-based mobile learning. The use of parallel virtual mechanisms ensures interaction between students and teachers in mixed learning. However, blended learning focuses on the necessary combination of traditional “focused” offline and online learning. Whereas the point of hybrid learning is to master and maximize the use of a combination of educational technologies, regardless of the format of the learning mode (online or offline). Therefore, hybrid learning involves optimal student interaction with an online educational resource. At the same time, the role of the teacher is largely to perform an advisory function.

E. A. Krug (2022) considers the joint use of various educational technologies in teaching as a significant synergistic effect, where, first of all, students’ independence is increased, their motivation is increased through the possibility of implementing personalized learning.

Hybrid learning has a huge potential for the development of independent work and organization of students. However, this process requires the development and implementation of special methods of methodological support by the teaching staff.

Improving the effectiveness of hybrid learning can contribute to:

1) providing more additional material on difficult tasks;

2) the possibility of communication with the teacher not only within the framework of classes;

3) the use of video clips and presentations during lectures;

4) increasing the time allocated by teachers to complete assignments;

5) expansion of technical platforms with a large set of functions for conducting classes.

Based on real-time synchronization, Y.I. Mikhailov believes that the indicator of the quality of the learning process can determine the level of achievement of the goal, that is, the degree to which the student and the knowledge, skills and abilities meet the requirements reflected in the educational program. In hybrid learning, authors write, first of all, requirements for faculty in the field of using multimedia learning techniques in relation to certain areas of increased knowledge.

Therefore, it can be concluded that higher education needs to continue to improve the quality of hybrid education, which can be carried out not only through the improvement of technical indicators, but also through the development of rational models of hybrid learning, individual educational trajectories and advanced training of teachers within the framework of information education technologies.

According to the stated purpose of this article, we will examine the educational quality system as a whole - an important understanding of the mechanisms for assessing the quality of education in a hybrid learning format.

Thus, the quality of education, as is known, is a permanently increasing level of educational activity of teachers and is characterized by a high result of student training, which is able to meet the needs of all participants of the educational process. As for the evaluation of the quality of education, this is a flexible and multifaceted procedure of content and form, which includes aspects of activities determined by the university itself according to its own value system. Methods and material of research. When assessing the quality of teaching, it is necessary to assess the conditions created by the university to ensure quality: the "starting" level of students and the resources provided by the university.

In turn, the assessment mechanisms will be:

a) level of student's educational achievements;

b) level of personal development;

c) teaching effectiveness in hybrid learning;

d) degree of motivation to continue learning in a hybrid format.

When developing a mechanism for evaluating the quality of teaching, we were guided by the tools of N.V. Bordovsky's methodology (2019), used to assess the quality of professional activity of university teachers.

Results. The methodology for assessing the quality of teaching is presented by the content of the assessment process, its structure and methods:

1. Contents of assessing the quality of teaching: assessment of the quality of educational results; assessing the quality of the process of achieving such results at the level of giving lectures and conducting practical classes;

2. The structure for assessing the quality of teaching includes assessing the quality of: educational results as the quality of students' mastery of the curriculum; lectures given on the academic discipline; conducted practical classes.

3. Methods for assessing the quality of teaching: teacher self-assessment; student survey; final grade.

These methods are aimed at objectifying the results and process of assessing the quality of teaching in situations of self-assessment and student surveys from the position of multidimensional comparison of the data obtained when measuring the same objects by the teacher and students.

The quality of teaching was measured using an integrated assessment, which was formed by the following approaches (Table 1). A point system in which each indicator is assigned a certain point. The integral indicator is obtained by simply summing the points. The assessment of the quality of teaching is an average weighted assessment based on a set of selected factors. This takes into account external assessment from interested consumers - students, as well as the self-assessment of the teacher himself. Assessing quality indicators on a three-point scale: 2 – "optimal level", 1 – "acceptable level", 0 – "unacceptable level". The generalized indicator was assessed similarly.

Table 1. Mechanisms for assessing teaching

Conditions of the teaching process	Implementation of the teaching process	Level of student preparation
Teacher qualifications	Organization of hybrid learning	Assessment of student preparation in the discipline
Digital Resources for Teaching	The effectiveness of using hybrid learning	Having motivation to use hybrid learning
Awareness Level of Hybrid Learning	Impact of Hybrid Learning on Student Development	Satisfaction with hybrid learning

Scientific and professional orientation of the content, reflection of the current state of science and practice

Optimal tempo and expressiveness of speech as an opportunity to listen, understand and write down the main points

Systematic and problematic nature of the presentation of content using modern educational technologies, reasoning of the expressed judgments and confirmation of theoretical positions with facts

Quality of seminars

Continuity of content of seminars, lectures and assignments for student's independent work

The dialogical nature of interaction with students as an opportunity for freedom of opinion, independent assessments and discussions

Optimal consideration of the interests and capabilities of all students

Self-assessment tools:

1. Scaled self-assessment for all indicators of teaching quality.

2. Self-analysis of educational results, process and reflection on the conditions that influenced the quality of the teacher's work with students in conditions of hybrid learning.

27% of teachers participated in the experimental work - young teachers with no more than 5 years of experience at the university, 28% – no less than 10 years, candidates of science - 43%, doctors of science –15%;(PhD) doctors -28%, senior teachers –15%.

The assessment objects shown in Table 2 are the most important from the point of view of quality assurance and elements of the teaching system.

Table 2. Indicators for assessing the quality of teaching in the organized format of hybrid learning

№	indicators for assessing the quality of teaching	Contents of assessment indicators
1	Invariance	educational process in the form of lectures, practical or seminar classes, consultations and exams
2	Monitoring	the teacher's influence on the professionally significant and personal development of students
3	Intercommunication	interactive interaction of students with the teacher, with each other and with educational resources.
4	Multi-format	the educational program, lesson scenario and teaching materials must be adapted to three interactions with the student at once: classical teaching in the classroom; conducting online seminars; independent offline work of students, which can be combined with the use of webinars and workshops.
5	Self-directed	student self-direction: from a passive listener, he turns into an active participant in the educational process, who independently decides what, when and in what form to learn, and also controls the achievement of his educational goals.
6	Personalization	Pedagogical activities are aimed at the development of each student, taking into account his individual needs and interests.

7	Feedback	Regular feedback from students is necessary to maintain educational interest and assess the mastery of the material covered.
8	Portioning	educational content is presented in stages, in “concentrated” portions, which allows students to better assimilate information and dive deeper into the topic.
9	Reflexivity	self-analysis and self-monitoring of educational activities and their results by students.

O. V. Fadeeva (2019), the quality of teaching teaching staff is identical to the quality of mastering competencies by students. An equally important characteristic of the quality of teaching, in our opinion, is the influence of the teacher on the personal development of students, manifested not only in knowledge of their subject and the ability to teach it, but also in respect for the student’s personality, in the communicative qualities of the teacher, in the presence of emotional intelligence, in the ability of pedagogical improvisation. The idea of evaluating the quality of teaching is expressed in a clear selection of signs (significant criteria) of quality, the definition of a point scale to assess the manifestation of indicators of the quality of educational activity in a particular teacher, as well as a methodology with a set of necessary procedures and tools.

The main provisions of the analysis and determination of the quality of teaching according to G.A. Bordovsky (2019) are: the invariance of the signs of the quality of teaching and the elemental composition of the professional activity of teachers at the university; a level assessment of the manifestation of each quality sign in the analysis of teaching activities; typification of teaching assessment structures regardless of the specifics of the subject and the content of the discipline.

Table 3 shows the indicators for evaluating the quality of teaching in an organized hybrid learning format. The content of evaluation indicators is presented: invariance, monitoring, intercommunicativeness, multiformatedness, Self-directed, personalization, feedback, portionality and reflexivity.

Table 3. Indicators for assessing the quality of teaching Contents of assessment indicators

Significant indicators	Quality levels		
	2	1	0
Quality of educational results			
Average academic score of students in academic discipline			
Students’ attitude to the results obtained, the teacher and his activities			
The quality of students’ knowledge in the academic discipline			
Quality of lectures and seminars			
Scientific and professional orientation of the content, reflection of the current state of science and practice			
Optimal tempo and expressiveness of speech as an opportunity to listen, understand and write down the main points			
Systematic and problematic nature of the presentation of content using modern educational technologies, reasoning of the expressed judgments and confirmation of theoretical positions with facts			
Quality of seminars			
Continuity of content of seminars, lectures and assignments for student’s independent work			
The dialogical nature of interaction with students as an opportunity for freedom of opinion, independent assessments and discussions			
Optimal consideration of the interests and capabilities of all students			

1. Invariance educational process in the form of lectures, practical or seminar classes, consultations and exams

2. Monitoring the teacher's influence on the professionally significant and personal development of students

3. Intercommunication interactive interaction of students with the teacher, with each other and with educational resources.

4. Multi-format the educational program, lesson scenario and teaching materials must be adapted to three interactions with the student at once: classical teaching in the classroom; conducting online seminars; independent offline work of students, which can be combined with the use of webinars and workshops.

5. Self-directed student self-direction: from a passive listener, he turns into an active participant in the educational process, who independently decides what, when and in what form to learn, and also controls the achievement of his educational goals.

6. Personalization Pedagogical activities are aimed at the development of each student, taking into account his individual needs and interests.

7. Feedback Regular feedback from students is necessary to maintain educational interest and assess the mastery of the material covered.

8. Portioning educational content is presented in stages, in "concentrated" portions, which allows students to better assimilate information and dive deeper into the topic.

9. Reflexivity self-analysis and self-monitoring of educational activities and their results by students.

Thus, in order to assess the quality of education in the course of experimental work, it was found that the activity of research respondents is determined by the quality of educational results at the level of academic disciplines, lectures, seminars, workshops, consultations, exams. The degree of activity of a particular teacher is determined in accordance with general requirements, regulations and standards. The differentiation of the qualitative assessment of education between different teachers is manifested taking into account the length of service at the university, the position

held, the presence or absence of a scientific degree and title. The quality of education of an individual teacher is determined according to the expectations and needs of the students, as well as the needs and potential abilities of the teacher himself.

Discussion. The results of the general assessment of the quality of education are presented in the form of a quantitative and qualitative assessment of the state of the activity carried out by the teacher in connection with the solution of educational problems during the implementation of the program in the academic field, as well as a measure of the correlation between the self-esteem of the teacher and the opinion of the student. Factor structure of self-assessment of the quality of education of teachers. The correspondence between the teacher's self-assessment and the student's assessment using ranking revealed a correlation coefficient from 0.4 to 0.6. Determining the average statistical assessment allowed us to talk about the final state of the quality of teaching of a particular teacher.

The study showed that in the factor structure of self-assessment of the quality of teaching among teachers, the factor conventionally called "Personal responsibility for the quality of educational results of students and the quality of teaching their discipline" dominates (the total variance explained by the action of the factor is 52%), then "Personal meaning of professional activity teacher in the educational process" (the total variance explained by the factor is 22%).

The third factor is "Professionalism of a university teacher" (the total variance explained by the factor is 24%).

In the factor structure of self-assessment of the quality of teaching among teachers of Abai KazNPU, the same factor dominates - "Personal responsibility of the teacher for the quality of educational results of students and the quality of teaching of their academic discipline" (the total variance explained by the action of the factor is 28%), then - "Confidence in ability to improve the quality of teaching" (total variance explained by the factor - 22%), "Reflection of the results of self-assessment" (total variance explained by the factor - 14%)

and “Teachers’ ideas about the requirements for high quality teaching at a university” (total variance – 14%).

In the factor structure of self-assessment of the quality of teaching among teachers of the Institute of Pedagogy and Psychology, the factor “Personal meaning of the professional activity of a teacher in the university educational process” dominates (the total variance explained by the action of the factor is 18%), then “Confidence in the ability to improve the quality of teaching” (the total variance , explained by the action of the factor –15%), “Style of control and issuing final grades” (total variance explained by the action of the factor –13.2%), “Strategies for improving the quality of teaching” (total variance explained by the action of the factor –13.7%).

In the factor structure of self-assessment of the quality of teaching among teachers of the “Special Pedagogy” department, the factor

we called “Teaching Style” dominates (the total variance explained by the action of the factor is 29%), then “Confidence in the ability to improve the quality of teaching” (the total variance explained by the action factor - 26%) and “Style of control and final grades” (total variance explained by the factor –21%).

During the study, the average value of the integral index for assessing the quality of teaching was determined both for the general sample of teachers ($X = 34$, standard deviation $S = 7$), and for teachers of each university separately. In accordance with the average indicator, teachers were conditionally assigned to a group in which the predominant level of self-assessment of teaching quality was above average.

Table 4 shows the results of the teacher’s self-assessment, his success in teaching, establishing the level of involvement in teaching and motivation.

Table 4. Indicators of self-reported success in teaching activities

		pedagogical effectiveness	adaptability and innovation
Group C (control)	Average value	30.92	26.53
	Standard Deviation	2,841	1,974
	Standard error of the mean	.449	.312
	Dispersion	8,071	3,897
	Excess	-1.417	-1.048
	Standard error of kurtosis	.733	.733
	Asymmetry	-.026	.329
Group D (influences)	Average value	37.68	33.30
	Standard Deviation	1,913	2,267
	Standard error of the mean	,303	.358
	Dispersion	3.661	5.138
	Excess	-1.489	-1.227
	Standard error of kurtosis	.733	.733
	Asymmetry	-.110	.011
Calculation of the nonparametric Mann-Whitney test			
	U Mann-Whitney	20,000	12,000
	Wilcoxon W	840,000	832,000
	Z	-7.544	-7.608
	Asymptotic significance (2-sided)	.000	.000

Teachers in group C (control) rated their teaching effectiveness at an average of 30.92, and their adaptability and innovation at 26.53. In group D, these indicators were

higher: pedagogical efficiency averaged 37.68 (6.76 more), and adaptability and innovation – 33.30 (6.77 more). Differences between groups on both subscales were

confirmed to be statistically significant as a result of calculating the Mann-Whitney test, which indicates a higher self-assessment of success in teaching among participants in the influence group. The level of involvement

in teaching and motivation of teachers from the two groups was also calculated when determining the significance of differences using a nonparametric test for two independent samples (Table 5).

Table 5. Indicators of the level of involvement in teaching

	involvement	motivation	
Group C (control)	Average value	29.65	29.35
	Standard Deviation	2,732	1,511
	Standard error of the mean	.432	.239
	Dispersion	7,464	2.285
	Excess	-1.345	-.763
	Standard error of kurtosis	.733	.733
	Asymmetry	.071	.350
Group D (influences)	Average value	35.43	36.03
	Standard Deviation	1,583	1.954
	Standard error of the mean	.250	,309
	Dispersion	2,507	3,820
	Excess	-1.136	-1.187
	Standard error of kurtosis	.733	.733
	Asymmetry	.185	-.145
Calculation of the nonparametric Mann-Whitney test			
U Mann-Whitney	42,000	.000	
Wilcoxon W	862,000	820,000	
Z	-7.331	-7.733	
Asymptotic significance (2-sided)	.000	.000	

In the control group, teachers reported a level of involvement in teaching at 29.65 and motivation – 29.35, and in the influence group there was an increase in these indicators: the average level of involvement was 35.43 (+5.78), and motivation – 36. 03 (+6.68). The results of the nonparametric Mann-Whitney test indicated statistically significant differences between the groups.

Conclusion. Hybrid learning, first of all, increases the requirements for faculty in the field of using electronic and multimedia learning techniques in relation to a particular field of knowledge. In hybrid learning, the teacher works simultaneously with 2 different classrooms, 1 of which is next to him in the classroom, and the 2nd is connected in video communication mode. The task of teachers in class is to pay equal attention to offline and online groups so that students receive an equal quality educational experience. In an ideal scenario,

a hybrid classroom should be equipped with a high-resolution camera and a high-quality microphone that transmits sound without echoes or delays, an interactive whiteboard, a large screen where video from a remote student webcam is broadcast, and a tablet or laptop for each listener of the audience.

The effectiveness of the learning process depends on both the qualitative and quantitative composition of the student’s body. Weak knowledge acquired previously can adversely affect the results of subsequent education, which requires sufficient basic training, and the attendance of low-level students to classes conducted in all forms of education. However, to date, there are no current standards for the provision of a hybrid learning process, which complicates the monitoring and measurement of the quality of this process. Indeed, the criteria for providing hybrid learning resources should differ to some extent from the current criteria

for full-time education in higher education institutions, which are used in assessing the effectiveness of educational activities in higher education institutions.

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