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## THE QUALIMETRIC BASIS FOR ASSESSING THE QUALITY OF FIELD PRACTICE IN HIGHER EDUCATION INSTITUTIONS

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**Abstract.** This article addresses the qualimetric methods for assessing the quality of field practice in higher education institutions. The primary aim of the study is to contribute to improving students' professional readiness by objectively and systematically evaluating the quality of field practice. Field practice provides students with a crucial opportunity to apply theoretical knowledge in real work environments and develop their professional skills. Therefore, the role of qualimetric approaches in assessing the quality of practice is highly significant.

During the research, a survey was conducted to determine the impact of field practice on graduates' career paths. The survey questions focused on key aspects such as students' experiences during practice, acquisition of professional skills, fairness and effectiveness of assessment methods, and the connection between theory and practice. This survey enhanced the value of the study by identifying the strengths and weaknesses of the field practice.

The results demonstrated the effectiveness of qualimetric methods in assessing the quality of field practice and included concrete recommendations aimed at improving educational quality. Moreover, the article emphasizes the importance of implementing a comprehensive evaluation system for field practice in higher education institutions to enhance the overall quality of education.

**Keywords:** field practice, qualimetry, quality assessment, educational system, pedagogical evaluation, professional preparation, research methods, quality assessment

### Introduction

Higher education institutions play a key role in the education system of the Republic of Kazakhstan. In the context of higher education, field (practical) training serves as a crucial stage in which students apply their theoretical knowledge in practice, develop professional skills, and engage in research activities. Through field practice, students are able to work in real-life settings, strengthen their competencies, and gain experience that is vital for their future professional careers.

According to the Law on Education of the Republic of Kazakhstan:

“The main task of the education system is to create the necessary conditions for acquiring education aimed at the formation, development, and professional enhancement of the individual, based on national and universal values, and the achievements of science and practice” [1].

Therefore, the learning process in higher education institutions should not be limited to theoretical instruction, but must also be reinforced through practice. Practical training significantly contributes to the development of competencies required in the labor market and enhances students’ readiness for employment.

Field practice is particularly important for students majoring in biology. It enables them to conduct real-world observations and research in natural settings, thereby deepening their theoretical knowledge and enhancing their scientific research skills. Through this hands-on experience, students develop creativity, adaptability, and decision-making abilities. Such practice plays a decisive role in shaping future biology specialists and improving their competitiveness in the job market.

However, there is still a lack of objective and systematic mechanisms for assessing the quality of field practice. In this context, the application of qualimetric methods offers a promising approach. Qualimetry is a scientific method that allows for the quantitative evaluation of quality. When applied in the educational process, it helps enhance the objectivity and precision of assessment procedures.

The purpose of this research is to develop an effective methodology for improving comprehensive field practice in the training of biology bachelor students, with a particular focus on establishing qualimetric foundations for quality assessment.

The object of the research is the process of training biology bachelor students through comprehensive field practice.

The subject of the research is the effective organization and assessment of comprehensive field practice.

Research hypothesis:

If the main objectives and content of the comprehensive field practice are clearly defined and structured based on qualimetric principles, then the effectiveness of the training process for future biology teachers will increase, contributing to the development of their professional competencies [3, p. 25].

Research objectives:

To identify the role of comprehensive field practice in the professional training of biology bachelor students;

To define the main tasks of field practice in the process of developing student competencies;

To clarify the essence of research activities that determine the content of field practice in the training of biology bachelor students.

By addressing these objectives, it is possible to develop a qualimetric

framework for assessing the quality of field practice, which will ultimately contribute to the improvement of higher education quality.

### **Materials and Methods**

One of the key components that contribute to the provision of quality professional education in today's higher education system is educational field practice. In higher education institutions, the learning process must not be limited to theoretical knowledge only but should necessarily be supplemented by hands-on practical experience. Educational field practice is a crucial phase during which students apply their theoretical knowledge in real professional settings, develop essential skills, and adapt to practice-oriented tasks relevant to their field. Through this experience, students enhance their professional competencies, learn to solve real-world problems, and evaluate their readiness for the labor market. Therefore, the quality, effectiveness, and relevance of field practice hold a special place in the structure of higher education [4, p. 45–47].

In modern education, field practice plays a significant role in improving students' professional qualifications. It not only teaches students how to apply theoretical knowledge in real-life conditions but also prepares them to become competent professionals. Higher education institutions must integrate practical training into the academic curriculum, as it enables students to gain real-world experience related to their future occupations. During educational field practice, students engage with actual organizations, tackle discipline-specific professional tasks, and enhance their career readiness. Furthermore, they gain the opportunity to assess their own development, identify areas for improvement, and strengthen their competencies. The quality of field practice increases the value of higher education institutions and plays a direct role in producing qualified and competitive graduates.

Higher education programs employ a variety of instructional methods and technologies aimed at preparing students as professionals. In this context, educational field practice serves as a critical component. The quality and effectiveness of field practice are influenced by various factors, including curriculum structure, the professional qualifications of instructors, the quality of teaching materials, and institutional conditions. In order to ensure and enhance the quality of education, it is essential to establish an assessment system for evaluating the quality of educational field practice, which can be based on qualimetric methods [5, p. 23–25].

Qualimetry is a scientific method that enables the quantitative evaluation of educational processes and outcomes. This approach allows for the objective assessment of students' theoretical knowledge, practical skills, and overall professional readiness. In addition, it encourages all participants in the educational process — students, instructors, and institutions — to work more effectively [6, p. 56–58].

The main advantage of qualimetric methods lies in their ability to assess pedagogical processes and outcomes using objective and precise numerical indicators. These methods enable the accurate evaluation of the quality of field practice, the development of students' competencies, and the overall effectiveness of academic programs. Such data-driven approaches contribute to curriculum enhancement and the improvement of educational resources.

Moreover, qualimetry helps students better understand their own progress by presenting clear quantitative results, thereby motivating them to improve. Instructors and institutions can also use these results to identify gaps and improve the quality of instruction and practice.

However, it is important to recognize the limitations of qualimetry. In some cases, relying solely on quantitative indicators may not fully reflect a student's development — especially their creative abilities, motivation, personal traits, or collaboration skills. These aspects of professional growth are difficult to measure through numbers alone and may be overlooked in a purely quantitative assessment model.

Thus, while qualimetry is a valuable tool for enhancing the effectiveness of the educational process, it is important to consider both its capabilities and its limitations. Quantitative data should be viewed as one part of a more comprehensive evaluation approach, as the quality and outcomes of education cannot be accurately measured by a single metric alone.

In the Republic of Kazakhstan, the education system is undergoing a series of reforms, one of which involves the renewal of the system for organizing and assessing educational field practice in higher education institutions. In this context, there is a growing need for new approaches and tools for evaluating the quality of field practice. Considering the advantages of qualimetric assessment methods, their application in the evaluation of educational field practice is both relevant and effective.

Through qualimetric methods, it is possible to conduct a comprehensive assessment of all key aspects of field practice — including students' theoretical knowledge, practical skills, the quality of instructional materials, institutional conditions, and the structure of the curriculum [7, p. 89–91].

Such a systematic evaluation model contributes to the improvement of education quality, helps students develop professional skills in real-world settings, and ensures that they are better prepared for future careers.

## **Results and discussion**

The purpose of this study is to establish qualimetric foundations for assessing the quality of field practice in higher education institutions. The research identifies effective methods for evaluating the quality of field practice and emphasizes the importance of applying these methods within the education system. Additionally, the study aims to develop the theoretical basis of qualimetric approaches for

assessing the quality of field practice [8, p. 120–122].

The relevance of this research stems from the necessity to update the methods of assessing field practice quality to improve the education system and enhance students' professional preparation. One of the most effective ways to increase the quality of education and improve students' professional readiness in higher education is through the application of qualimetric methods. The qualimetric approach allows for a quantitative assessment of all aspects of field practice, which contributes significantly to enhancing the educational process [9, p. 132–134].

#### Survey and Data Analysis

To validate the effectiveness of the proposed qualimetric assessment methods, a survey was conducted among 100 biology students who recently completed their field practice. The survey consisted of 10 questions aimed at gathering information on students' attitudes towards the practice, its effectiveness, and challenges encountered. The questions covered the development of professional skills, fairness of evaluation methods, practical application of theoretical knowledge, and overall satisfaction.

#### Summary of Survey Results

№	Survey Question	Fully Satisfied (%)	Satisfied (%)	Not Satisfied (%)
1	To what extent did the field practice improve your skills?	45	40	15
2	Did you face difficulties during the practice?	30	50	20
3	Were the evaluation methods fair and objective?	50	35	15
4	How well did the practice demonstrate the connection between theory and practice?	55	35	10
5	Were the materials and resources sufficient?	40	45	15
6	Did the practice increase your confidence in future employment?	48	42	10
7	How supportive were the instructors?	50	38	12
8	Did the program adequately prepare you professionally?	46	40	14
9	Did you feel like a professional during the practice?	44	42	14
10	Overall, how satisfied are you with the field practice?	47	40	13

#### Analysis

The survey results indicate a high level of student satisfaction with the field practice. Approximately 85% of respondents believe the practice significantly enhanced their professional skills and allowed them to apply theoretical

knowledge in real-life settings. However, around 20% of students reported insufficient resources and difficulties adapting to practical conditions, indicating areas for improvement in the organization of the practice.

The fairness and objectivity of evaluation methods received positive feedback from 85% of students, confirming the effectiveness of qualimetric methods. This supports the research hypothesis that a clear and structured assessment system contributes to better educational outcomes.

#### **Qualitative Feedback**

Some students highlighted the importance of gaining experience in a natural environment, which deepened their understanding and boosted their confidence. For example, one student stated, “The practice gave me the opportunity to apply theory in real situations, which is crucial for my future profession.” Instructors also noted that clear and measurable evaluation criteria helped tailor educational programs to student needs.

#### **Scientific Novelty and Practical Significance**

The scientific novelty of this study lies in the development of a multidimensional qualimetric framework for assessing the quality of field practice and proposing a new assessment system based on this framework. This system allows for an objective evaluation of all aspects of the practice and facilitates the implementation of measures to improve education quality. The findings also enable improvements in the educational process in higher education institutions, promote the development of students’ professional skills, and improve the effective management of pedagogical activities [12, p. 161–163].

This qualimetric approach enables the identification of strengths and weaknesses within the educational process and supports the implementation of targeted improvement measures. Furthermore, the clarity and measurability of the assessment criteria enhance student motivation and contribute to the development of a culture of professional growth. The proposed system allows for an objective evaluation of all aspects of field practice and serves as a foundation for implementing measures aimed at improving the quality of education [11, p. 155–157].

#### **Conclusion**

The assessment of the quality of field practice in higher education institutions is one of the most important and relevant issues in the current educational system. This practice provides students with the opportunity to master professional skills, apply theoretical knowledge in practice, and develop into competitive specialists in the labor market. The assessment of the quality of field practice serves as a strategic tool aimed at enhancing the effectiveness and quality of educational programs.

During the research, the qualimetric foundations for assessing the quality of field practice were clarified, and conclusions were drawn regarding the necessity and importance of implementing them in higher education institutions.



The methodology of qualimetry, which evaluates pedagogical processes and outcomes through quantitative indicators, allows for an objective assessment of the effectiveness of field practice. This method covers all aspects of the educational process (students' knowledge and skills, conditions of practice, and teachers' professional qualifications) and helps identify effective ways to improve the quality of education.

The introduction of qualimetric methods is an important step towards improving the effectiveness of the assessment system for field practice. These methods encourage all participants in the educational process—students, instructors, and educational institutions—to collaborate. By evaluating students' professional readiness at a high level, educational institutions can optimize their programs and improve teaching methodologies. Additionally, qualimetric assessment methods contribute to enhancing students' professional skills and achieving higher outcomes in employment.

The study identified the importance of introducing specific indicators and methods to improve the effectiveness of field practice. For example, clear criteria for assessing students' professional skills, evaluating the results of practical tasks, analyzing workplace experience, and assessing instructors' qualifications are key tools aimed at improving the overall quality of the educational process.

Moreover, the advantages of qualimetric evaluation not only improve the educational process but also enable effective management of educational institutions. Each institution can update its teaching methodologies, enhance the effectiveness of practice programs, and objectively evaluate students' readiness. This facilitates easier and more accurate monitoring and management of education quality.

In conclusion, the qualimetric foundations for assessing the quality of field practice in higher education institutions are an essential tool for improving the effectiveness of the education system. By continuously enhancing the educational process, updating curricula, improving instructors' professional skills, and implementing a clear system for evaluating students' professional competencies, the overall quality of education can be significantly improved.

This research lays the groundwork for creating an effective qualimetric system for evaluating field practice. In the future, these methods will be widely applied in educational institutions and will undoubtedly contribute significantly to improving the quality of higher education in the country. Furthermore, integrating qualimetric methods across various disciplines within the education system will further enhance the quality and effectiveness of field practice.

Thus, the qualimetric foundations for assessing the quality of field practice in higher education institutions offer great opportunities to improve education quality, develop students' professional skills, and strengthen their workforce readiness, while also laying the foundation for implementing forward-looking strategies.

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## **ЖОҒАРЫ ОҚУ ОРЫНДАРЫНДА ОҚУ-ДАЛАЛЫҚ ПРАКТИКАНЫҢ САПАСЫН БАҒАЛАУДЫҢ КВАЛИМЕТРИЯЛЫҚ НЕГІЗІ**

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**Аңдатпа.** Мақалада жоғары оқу орындарында оқу-далалық практиканың сапасын бағалаудың квалиметриялық негіздері қарастырылады. Оқу-далалық практика – студенттердің теориялық білімдерін практикада қолдануына, кәсіби дағдыларын дамытуына және ғылыми-зерттеу жұмыстарын жүргізуіне мүмкіндік беретін маңызды кезең. Зерттеудің мақсаты – оқу-далалық практиканың сапасын бағалауда квалиметриялық әдістерді пайдалану арқылы білім беру үдерісін жетілдіру. Жоғары оқу орындарындағы оқу-далалық практиканың сапасын бағалау – білім беру сапасын арттыру мен студенттердің кәсіби дағдыларын дамытудағы

маңызды аспектілердің бірі. Квалиметрия – білім беру үдерісін бағалауда сандық және сапалық көрсеткіштерге негізделген әдіснамалық тәсіл. Зерттеу барысында квалиметриялық әдістердің оқу-далалық практиканың тиімділігін бағалаудағы рөлі мен маңызы айқындалады. Оқу-далалық практика жоғары оқу орындарындағы білім беру жүйесінің маңызды бөлігі ретінде студенттердің алған теориялық білімдерін практикада қолдану мүмкіндігін қамтамасыз етеді. Бұл тәжірибенің сапасы мен тиімділігі, өз кезегінде, білім беру бағдарламаларының сапасына, оқытушылардың кәсіби біліктілігіне және оқу-әдістемелік материалдардың сапасына байланысты болып келеді. Осы орайда, оқу-далалық практиканың бағалануы квалиметриялық тұрғыдан өзекті мәселеге айналып отыр. Квалиметриялық әдістер оқу үдерісіндегі әртүрлі факторларды сандық көрсеткіштер арқылы бағалауға мүмкіндік береді, бұл білім беру сапасын арттырудың тиімді жолдарын анықтауға көмектеседі.

Зерттеу мақсаты – жоғары оқу орындарында оқу-далалық практиканың сапасын бағалаудың квалиметриялық негіздерін әзірлеу, оны жетілдіру жолдарын анықтау және білім беру үрдісінің тиімділігін арттыру. Оқу-далалық практиканың тиімділігін бағалау барысында қолданылатын әдістер мен тәсілдер, сондай-ақ алынған нәтижелер мен ұсыныстар осы жұмыстың негізгі мазмұнын құрайды. Бұл зерттеу білім беру жүйесіндегі оқу-дала практикасының сапасын арттыру үшін квалиметриялық бағалау әдістерінің маңыздылығын көрсете отырып, білім беру саласындағы реформаларды жүзеге асыруға негіз бола алады.

**Тірек сөздер:** оқу-далалық практика, квалиметрия, сапа бағалауы, білім беру жүйесі, педагогикалық бағалау, кәсіби дайындық, зерттеу әдістері, сапа бағалауы

## ОЦЕНКА КАЧЕСТВА ПОЛЕВОЙ ПРАКТИКИ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ

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**Аннотация.** В статье рассматриваются квалиметрические основы оценки качества полевой практики в высших учебных заведениях. Полевой опыт является важным этапом, который позволяет студентам применять теоретические знания на практике, развивать профессиональные навыки и проводить научно-исследовательскую работу. Цель исследования – улучшение образовательного процесса с использованием квалиметрических методов для оценки качества полевой практики. Оценка качества полевой практики в высших учебных заведениях является одним из важных аспектов повышения качества образования и развития профессиональных навыков

студентов. Квалиометрия представляет собой методологический подход, использующий систему количественных и качественных показателей для оценки образовательного процесса. В ходе исследования определяется роль и значение квалиметрических методов для оценки эффективности полевой практики. Полевой опыт является важной частью образовательной системы в вузах, предоставляя студентам возможность применять теоретические знания на практике. Качество и эффективность этого опыта, в свою очередь, зависит от качества образовательных программ, профессиональной квалификации преподавателей и качества учебно-методических материалов. В этом контексте квалиметрическая оценка полевой практики становится актуальной задачей. Квалиметрические методы позволяют оценить различные факторы образовательного процесса с помощью количественных показателей, что помогает определить эффективные пути повышения качества образования.

Цель исследования – разработка квалиметрических основ оценки качества полевой практики в высших учебных заведениях. Методы и подходы, применяемые для оценки эффективности практики, а также полученные результаты и рекомендации составляют основное содержание работы. Это исследование подчеркивает важность квалиметрических методов оценки качества практики для улучшения системы образования и служит основой для реализации реформ в образовательной сфере.

**Ключевые слова:** полевой опыт, квалиометрия, оценка качества, образовательная система, педагогическая оценка, профессиональная подготовка, исследовательские методы, оценка качества

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