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Modern Methods and Criteria for Assessing the Scientific-Pedagogical Activities of Master's Students

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Abstract. The article is devoted to modern methods and criteria for assessing the scientific-pedagogical activities of master's students. It examines issues related to organizing scientific research activities for master's students in pedagogical fields, measuring motivational-value indicators, and utilizing bibliometric analyses and rating-point systems. Mechanisms for assessing competencies during pre-diploma and production practice—dividing them into critical, sufficient, and advanced levels—are analyzed, along with the portfolio method and the development of innovative approaches through scientific seminars. It is emphasized that modern assessment methods enable comprehensive measurement of students' scientific activities in terms of process dynamics and outcomes, enhance motivation, and improve the quality of pedagogical education.

Keywords. Master's degree, scientific-pedagogical activity, assessment methods, criteria, competencies, practice, rating system.

Introduction. Modern methods and criteria for assessing the scientific-pedagogical activities of master's students play a crucial role in the development of the education system, as this process is aimed at ensuring the professional preparation of future pedagogues. Engaging in scientific research work contributes to the professional development of master's students and helps enhance the quality of education by facilitating the application of innovative approaches in practice. Contemporary educational standards encourage students' scientific activities not only through the assimilation of theoretical

knowledge but also by promoting active participation in the research process, thereby fostering creativity and critical thinking. Assessment criteria serve as the primary tool for determining the effectiveness of this activity, and their development takes into account the dynamic characteristics of competency formation.

Modern methods of assessing scientific-pedagogical activities begin with coordinating master's students' research work, implemented through university scientific communities. Such structures play a central role in involving students in the research process, as they integrate scientific-organizational and research activities. In this approach, master's students' scientific work is organized within departments, centers, and laboratories, which serves to increase their motivation. Assessment employs motivational-value criteria that measure students' level of interest in scientific activity. These criteria include indicators such as interest in scientific research, self-assessment, and the ability to present results. Experimental findings indicate that the majority of master's students exhibit average or low levels in these indicators, highlighting the need to improve assessment methods. Modern technologies, such as bibliometric analysis and indices—including the h-index—are utilized in the assessment process to evaluate the impact of scientific publications.

In assessing scientific-pedagogical activities, the levels of competency formation are particularly important, especially during pre-diploma practice. Assessment criteria are developed with consideration of the component structure of competencies, enabling evaluation of students' activities in real-world conditions. Criteria include the ability to write scientific texts, present research results, and engage in discussion. Assessment levels are divided into three categories: critical, sufficient, and advanced. At the critical level, competencies are minimally manifested, for example, through the absence of logical connections in writing or errors in selecting research methods. At the sufficient level, competencies are partially formed, allowing students to conduct research but without fully applying innovations. At the advanced level, competencies are fully manifested, with students employing creative

approaches and presenting results at a professional level. These levels are reflected in assessment sheets through a point system, aiding precise measurement of activity quality.

Practical training plays a fundamental role in preparing master's students for scientific research activities, as it focuses on solving real problems in the educational field. Scientific seminars and discussions are employed to form master's students' scientific competencies, encouraging participation in innovative projects. Assessment criteria are based on analyzing the outcomes of practical activities, such as presenting research results and integrating them into the educational process. In this method, master's students' scientific work is aligned with educational standards, ensuring their professional development. During practice, assessment is conducted via a rating system that measures the quality of each task with points. For instance, conducting lessons and developing research projects are evaluated, enabling comprehensive assessment of students' activities.

Results and Discussion. In production practice, the content of assessing master's students' activities integrates pedagogical and scientific research components, facilitating testing in real conditions. Assessment criteria include task quality, application of innovative approaches, and result analysis. Assessment is performed through a rating system, for example, developing lesson concepts (10–20 points), conducting physical education events (20–30 points), and SWOT analysis (10–20 points). These criteria enable precise measurement of students' activities by accounting for task completeness and compliance. During practice, the development of students' scientific research apparatus is assessed, determining their readiness for dissertation work.

Modern assessment methods evaluate master's students' scientific-pedagogical activities not only based on outcomes but also considering the dynamics of the process. In this approach, the level of competency formation is assessed, for example, in writing and presenting scientific texts. Assessment criteria include logical structure, use of terminology, and discussion of results. These criteria allow evaluation of students' activities across three levels,

contributing to the improvement of the educational process. During practice, assessment also employs the portfolio method, involving the collection and analysis of students' work.

Modern criteria for assessing scientific-pedagogical activities are aimed at enhancing master's students' motivation, as they evaluate interest in scientific work. Criteria include the level of interest in scientific research and the ability to present results. Experimental methods are applied in the assessment process to determine students' indicators. These criteria enable comprehensive evaluation of students' activities by accounting for the quality and effectiveness of scientific work.

In pre-diploma practice, assessment criteria focus on determining competency formation, evaluating students' readiness for dissertation work. Criteria include selecting research methods and analyzing results. Assessment levels evaluate students' activities across three categories, aiding improvement of the educational process. These criteria enable assessment of students' scientific-pedagogical activities in real conditions.

In practical training, assessment criteria account for master's students' participation in scientific seminars, developing their research abilities. Criteria include discussion and result presentation. These criteria enable comprehensive evaluation of students' activities by assessing the application of innovative approaches.

In production practice, assessment criteria evaluate task quality through a point system, precisely measuring students' activities. Criteria include SWOT analysis and development of methodological apparatus. These criteria enable assessment of students' scientific-pedagogical activities by accounting for result effectiveness.

Modern assessment methods evaluate master's students' scientific activities through bibliometric analysis, determining publication impact. This method enables comprehensive evaluation of students' activities by accounting for scientific work quality.

In the assessment process, competency levels are considered, evaluating students' development. Levels include critical (minimal formation), sufficient (partial formation), and advanced (full formation). These levels make assessment precise and understandable.

During practice, the portfolio method is applied, involving collection and analysis of students' work. This method enables comprehensive evaluation of students' activities by accounting for result presentation.

Modern criteria for assessing scientific-pedagogical activities help enhance master's students' motivation by evaluating their interest. Criteria measure the level of interest in scientific work, contributing to improvement of the educational process.

Conclusion. Modern methods and criteria for assessing the scientific-pedagogical activities of master's students manifest as a vital mechanism for forming and developing professional competencies at the master's stage in higher education's pedagogical directions. This process commences with organizing students' scientific research activities through university scientific communities, departments, and laboratories, extending to the measurement of motivational-value indicators. The application of modern technologies such as bibliometric analyses and the h-index in assessment enables determination of the impact level of scientific publications and provides a realistic evaluation of students' scientific activities. During pre-diploma and production practice, dividing competencies into three levels—critical, sufficient, and advanced—accurately reflects students' abilities in writing scientific texts, presenting research results, and engaging in discussion. Approaches such as the rating-point system, portfolio method, and point-based measurement of task quality ensure comprehensive assessment of every activity component—from developing lesson concepts to SWOT analysis. In practical training, innovative approaches formed through scientific seminars and discussions enhance students' abilities to solve real problems in the educational field and align assessment criteria with educational standards. Ultimately, modern assessment methods measure master's students' scientific-pedagogical activities not only by

outcomes but also by process dynamics, strengthening their motivation, developing creativity and critical thinking, and serving to elevate the overall quality of pedagogical education. These approaches establish a reliable foundation for adapting the professional preparation of future pedagogues to contemporary demands in the higher education system.

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