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TECHNOLOGY OF DEVELOPING METAPREDMET COMPETENCE OF FUTURE METROLOGICAL ENGINEERS IN PRACTICE-ORIENTED EDUCATION

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As is known, the task of industrial training practice is to train qualified personnel for modern manufacturing enterprises, to consolidate and improve the knowledge and skills of future metrologist engineers in the professions they are studying [1;2].

Later, a working program was developed for the training direction "Metrology, Standardization and Quality Management" of higher technical educational institutions: 60711300-"Introduction (Production) Practice in the Profession of Metrology, Standardization and Quality Management".

It was recommended to use the following methods in the formation and development of professional and practical competencies of future metrologist engineers (learning through independent completion of tasks, the "Four-step" method, explanation, showing what to do, repeating the work as shown, practicing, adapting to the profession, the "Guideline Text" "Project" method, exercises on a computer simulator and stimulator, business games, seminar-trainings, "5-S", "Lean technology", "Fishbone" diagram, "Kanban" method, methods for analyzing professional situations, "Lean Thinking for higher education", "5-Why" - "1-How", "PDCA (Deming cycle)" methods, development of initiatives, professional trainings, group discussions) [4. 64-68- b].

Mutually beneficial cooperation between manufacturing enterprises and universities is a requirement of the time. Undoubtedly, this cooperation will further expand the possibilities of training qualified personnel. The professional training of a future metrologist engineer depends on his successful mastery of general professional disciplines. In particular, organizing training on the basis of meta-subject connections and using the knowledge gained by future metrologist engineers in these disciplines in activating educational activities will give positive results.



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Indeed, the times demand that "the content of education should be brought as close as possible to real-life needs."

The above issues require the search for ways to improve practical education in higher educational institutions. According to OV Saplin [202, 60-65- b], the most optimal is the targeted training of future metrologist engineers for specific enterprises, that is, the provision of educational services to customer enterprises. At the same time, the need for professional, intellectual, cultural and moral development of the future metrologist engineer is satisfied.

The enterprise is a demander and at the same time a customer for specialists. It clarifies the requirements of state educational standards, makes its proposals for introducing additions (territorial components) to educational standards and requirements for training specialists, and provides material and financial assistance for their implementation [3].

In particular, during the internship at universities, specialized institutions or production enterprises, future metrologists have a great opportunity to develop professional skills. The basis for the acquisition of metasubject competence by future metrologists is based on the materials of the concept of assessing a person's attitude to work. It presents two models of a person's attitude to work. In the first of them

"X" indicates a person who lacks initiative, is irresponsible, and requires constant monitoring and detailed regulation (management) of his activities.

In the second model, "Y" embodies an enterprising, responsible, ambitious person who strives to realize his potential. This concept can be supplemented with a third model, "Z". It can be imagined as a model that characterizes a person with corporate culture and corporate creativity.

This model can be of paramount importance in conducting the qualification practice of future metrologist engineers in an educational institution, as well as in organizing the work of an institution or production enterprise. In this case, future metrologist engineers accept the special values of education and implement them in the educational process by implementing two strategies:



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The first strategy for addressing current issues in the development of education is innovative activities and the development of practical and professional competence in the workplace;

The second strategy - learning new functional tasks of future metrologist engineers in the workplace - can be described as "corporate training", "training in a partner company or organization cooperating with the university, that is, a company or enterprise that produces products based on "Kaizen" technology," "training in a company," in our case, "training in an enterprise" or "training in an organization."

The time and duration of the process of organizing "training at the enterprise" during the training practice are determined by the agreement concluded with the educational institution and the enterprise where the qualification practice of future metrologist engineers is carried out, and by the duration of the qualification practice. It is necessary to take into account the systematic course of this process and its becoming an integral part of the development strategy of the enterprise or institution. "Training at the enterprise" can be grouped (classified) as continuous training. In accordance with this thesis, during the training practice, future metrologist engineers can be conditionally divided into "training at a firm or enterprise that has cooperation relations with a higher educational institution and produces products based on Kaizen technology" or "training at the enterprise" into the stages of "professional training", then "professional retraining" and then "advanced training" [5].

During the training practice, the initial professional "preparatory stage" is aimed at preparing future metrologist engineers to learn how to install, operate and conduct metrological inspections of control and measuring instruments, develop standard technological documents and their targeted application, and acquire competencies in the use of information and communication technologies in the process of practical professional activity. It can consist of training in the training workshop of an educational institution, "training in a company or enterprise that has cooperation relations with a higher education institution and produces products based on Kaizen technology," or directly on the basis of a manufacturing enterprise.

It is necessary to emphasize the following features of "in-company training" of future metrologist engineers during their internship:



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- corporate learning technology is of interest to all participants in the educational process;
- The process of "training at the enterprise" allows future metrologist engineers to consolidate and update their meta-subject competencies.

During the internship, the training formats are selected by the leader or the enterprise team based on the needs of future metrologist engineers: professional work, maintenance and inspection of measuring instruments, familiarization with the forms of application of repair techniques, assistance in the practical work of enterprise employees, preparation of stands on maintenance and repair of equipment, observation of the work of experienced specialists, independent development of work standards and procedures, design seminars, reflexive seminars, observation of the work of creative groups, observation of the work of collective associations.

Reference list

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