ПРОФЕСІЙНА ОСВІТА

UDC 378.013:378.2:502-057.87 (045)

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PECULIARITIES OF LOGICAL AND METHODOLOGICAL APPROACH TO THE QUALIFYING PAPER DEVELOPMENT BY ECOLOGIST AND CHEMMYTOLOGIST

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Abstract. *Algorithm of the qualifying paper development is proposed. Periodical publications on ecological and chemmytological directions are systematized.*

Keywords: algorithm; methodological guide; qualifying paper.

1. Problem Statement

The task of higher education is not only to train specialists of the particular area of knowledge but also to help young specialists in correct adaptation to real conditions of professional activity and to implement obtained scientific knowledge in the practical area.

During the educational process student develops a great number of intellectual and cognitive papers, among them a qualifying diploma paper (or project) is students' compulsory qualifying educational and scientific research, which is developed at the final stage of studying and is an important part of teaching process at the educational establishment of any accreditation level.

2. Analysis of researches and publications

Methodological bases of scientific activity, especially performed by students, are presented by many authors [1-5], that finally allows to analyze profoundly the material for improving recommendations to qualifying papers development.

The purpose of the work is to develop an algorithm of the work on qualifying paper, that will be based on generalization, systematization, confirmation and widening of obtained theoretical knowledge and practical skills in the field of ecology and chemmytology and on efficiency of obtained knowledge for solving specific scientific and applied problems of ecological and chemmytological usage.

3. Qualifying paper development

The main tasks for students during the process of qualifying paper development are the following:

1. The choice and formulation of the scientific research subject, which, first of all, must be important, corresponding to current state and perspectives of ecology and chemmytology development. Scientific and research work in the field of ecology must include:

– analysis of the impact of specific anthropogenic activity subject on ecological situation in the given region;
– development of improving measures;
– economically useful offers.

Subject of the scientific research must:

– solve the new scientific task, which has never been developed;
– include essential novelty in the phenomena and processes;
– correspond to scientific collective, that has enough adequacy, specialization, experience, sufficient theoretical level, in particular scientific tasks solution.

Certainly, every subject foresees the creative approach and demands initiative from student. Successful accomplishment of the work in general depends on the subject choice.

2. Review and analysis of the specific scientific and informational sources by chosen subject of diploma paper.

In the process of qualifying paper development it is worth to mark the role of periodical publications, which show the results of earlier scientific researches by the certain subject: «Ecotechnologies and Efficient Use of Resources», «Nature Management», «Ecological Problems of the Cities and Recreation Areas», «Ecology and Industry of Russia», «Ecological Systems and Devices», «Water: Chemistry and Ecology», «Water and Ecology», «Environmental Protection in the Oil and Gas Industry».

To periodical publications, which can be useful and include the columns «Environmental Protection», «Ecology» and perform the results of researches in the field of chemmytology are the

following: «Oil and Gas Industry», «Chemistry and Chemical Technology», «Chemistry, Physics and Surface Technology», «Bulletin of the National Aviation University», «High-tech Technologies», «Scientific Bulletin of «Kyiv Polytechnic Institute», «Russian Chemical Journal, Oil and Gas Technologies», «Chemical Engineering», «Chemistry and Water Technology», «Journal of Applied Chemistry», «Chemistry and Technology of Fuels and Lubricants», «Chemistry of Raw Plant Materials», «Water Purification. Water Treatment. Water Supply», «Chemistry in the Conditions of Sustainable Development», «Chemistry of Solid Fuel», «Oil Economy», «Pipeline Transport of Oil», «Siberian Chemical Journal», «World of Oil Products», «Municipal Utilities», «Hydrocarbon Processing», «Water Treatment», «Problems of Chemistry and Chemistry Technology».

The materials of periodicals must be analyzed from the point of view of studied subject also taking into account research results from allied sciences.

3. Formulating and grounding of the purpose, object and subject, tasks, methods of scientific research, scientific novelty and personal contribution of student-researcher.

The purpose of scientific research is comprehensive, objective and justified research of phenomena, processes, its characteristics, connections on the base of developed in the science principles and cognition methods and obtaining useful for human activity results, manufacture application for improving its effectiveness [5].

The researcher's cognitive activities are directed to research object. This is the process or phenomenon which causes the problematic situation is chosen for research.

The research subject is propertied investigated with certain aim, specific for scientific cognition, it is a determination of certain «aspect» of research as an assumption about the most important for investigation of the chosen problem object characteristics.

Object and subject as categories of scientific cognition correlate as the general and the particular.

Student must use generally scientific and specific methods of scientific research according to particular field.

The characteristics which determine the scientific novelty of the paper are the following:

– new scientific problem statement;

– introduction of the new scientific categories and notions;

– revealing of the new regularities of natural processes;

– usage of the new methods, means and researching mechanisms;

– development and scientific grounding of suggestions for improvement of the objects, processes and technologies;

– development of new scientific notions about the world around, nature etc.

The scientific novelty is not just recounting of determined facts, ideas, regularities. It must reveal author's main scientific conception, give scientific explanation of the researches essence by qualitative and quantitative aspects.

The personal contribution of the student who works on qualifying paper lies in analyzing of the current researches in specific field of knowledge and in carrying out of the scientific research experiments.

4. Description and analysis of the experimental research techniques.

Correctly developed techniques determine research value.

Experiment techniques obligatory include:

– working hypothesis developed earlier;

– experiment conditions organization;

– determination the measurement limits;

– systematical supervision;

– description of researched process character and peculiarities;

– experiment conditions change;

– passage from empirical studying to logical generalizations, analysis and processing of obtained data.

The main aim of experiment as cognitive method on empirical level is disproof or confirmation of developed earlier hypothesis, i.e. the experiment is criterion of working hypothesis veracity.

Physiological factors play important role during the experiment.

The student must be concentrated, balanced, purposeful, scrupulous, attentive, creative in solving different problems.

5. Generalization of obtained results, grounding of conclusions and practical recommended practices.

The results of scientific researches are the better, the higher is scientific level of conclusions, generalizations, its authenticity and effectiveness.

4. Conclusions

The logical and methodological basis for student's work during qualifying paper development was formed. This allows to improve the quality and effectiveness of student's work for ecological and chemmytological direction.

The scientific researches, carried out during qualifying paper development, can have the further development during the scientific and research preparation to obtain scientific degree.

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