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NATALIIA RIDEI[1], **NATALIA BORDIUG**[2]

Implementation of Applied Training Techniques to the System of Postgraduate Education

[1] ORCID: 0000-0003-1392-9890, Doctor of Pedagogical Sciences, National Pedagogical Dragomanov University, Ukraine
[2] ORCID: 0000-0002-4707-0060, Candidate of Agricultural Sciences, Associate Professor Department of Environmental Safety and Natural Resources Management, Zhytomyr National Agroecological University, Ukraine

Abstract

The paper presents the analysis of the practical training methods, which are used during professional training of specialists in ecology in the system of postgraduate education. The method of projects and training, as the best methods of professional development, are described. The importance of application of binary teaching methods is analyzed; their integral effect on professional development in the system of postgraduate education is shown.

Keywords: professional competences, methods of practical training, postgraduate education, specialists

Introduction

The development of professional environmental education for sustainable development should ensure the formation of environmentally responsible lifecycle behavior, a holistic, interdisciplinary approach in the learning and cognitive processes, which are necessary to address today's global challenges and advance to balanced sustainable future. State, corporate (branch) orders for postgraduate training and professional advanced training determine the target educational directions of training, retraining of specialists, focused on specific problems and results. The integration of professional training with production is a complex dynamic system that ensures close interconnectivity between these components and promotes the integrity of science and production. Training of a competent specialist on the basis of such integration drives the application of various methods of practical training.

Main part

General questions of the theory and practice of teaching are presented in the works by Kuzminsky (2005) and others; conceptual approaches to the formation

of professional and practical training are presented by Sysoeva (2008) and others; the methodology of organization and content of professional practical training in higher agricultural educational institutions is studied by Mitryasova (2014); methods of training specialists are covered by Erhanova (2008) and others; the theory, methodology and practice of environmental education and education for sustainable development are the topic of works by Drobnokhod (2010), Stepanenko (2009) and others.

Professional and practical development of a specialist is an important component in the system of postgraduate education. Therefore, during practical training, advanced training or retraining you need to use practical training methods. Functional integration of the practical training methods is provided in educationnal, developmental, analytical, research, motivational-stimulating, knowledge identification and consolidation and diagnostic-regulating activities.

Methods of practical training are grouped according to the source of information, the degree of creative work activation, the logic of knowledge and perception, and the level of independent cognitive activity; interactive and situational.

According to the sources of information the methods are divided into:

1. Verbal methods – conversation, dialogue, narration, explanation, production technology, professionally oriented seminars, forums, roundtables, briefings.

2. Visual methods – figures, modeling, contributing to efficient evaluation of the developed environmental technologies, plans, programs, solution of algorithmic tasks of general-environmental, applied and research orientation.

3. Practical methods gives students possibility to solve industrial and practical problems, creative and research, calculative practical tasks of nature conservation character, conduct their own

4. environmental statistical studies, and master methodologies (methods, standards) for conducting analytical, research and experimental works.

The most efficient methods in the system of postgraduate education are the simulation of educational and cognitive activity, which are aimed at the independent mastering of the methods of environmental research, creative thinking for both problem-solving and research-related tasks. During practical activity professional business games of systemic-constructive nature, the method of the "action maze" and round tables are used among the simulation methods, they are also used to develop the scenarios of modeling structures of processes and mechanisms that take place in professional environmental activity. Business games provide the opportunity to plan, design the efficiency of developed strategic and time plans of environmental management, administrative and territorial managementg of natural, agro-, urban-, technoecosystems, urban and rural areas, enterprises in the form of a game. The method of the round table is used during the development of interdisciplinary laboratory-practical, research-based and postgraduate studies with the purpose of discussion in the form of reports,

discussions of complex theoretical and practical problems associated with the protection and conservation of the environment, as well as for the exchange of practical experience in environmental management. The “action maze” method improves the ability to work with various information (of different origin and on different media) under the condition of limited quantity of information and time, skills of adequate assessment of the environmental state, choice of scenario of the situation development, making environmentally and socially responsible adequate and timely decisions, and characterize the complexity of the ecosystem and define the level of safety.

Methods of practical training according to the logic of knowledge and perception are divided into methods of analysis and synthesis, inductive and deductive methods, which involves application of the ecosystem approach to studying the biotic and abiotic components of the environment, social and anthrogenic, solving the problems of preservation of the environment, solution of a number of tasks of situational nature, development of the programs of the nature protection at state, regional and local level.

According to the level of independent cognitive activity, the following teaching methods are distinguished: probolemno-informational, proboblemno-exploratory and research methods of environmental studies, which evolve from the ability of specialists to prafesinno-practical activity in the course of professional training. These methodologies help to strengthen the students' professional and practical abilities in their search and research activities and to promote their initiative, self-actualization, and resourcefulness.

Integral effect in professional development in the system of postgraduate education provides systemic application of binary methods (visual-practical, laboratory-research, production-testing, design-search, expedition-experimental). They are used in solving problem situations, situational problems, modeling problems, exercises - trainings is aimed at systematic complex research, verification (examination), expert evaluation, environmental impact assessment, requiring the processing of a significant amount of information, accounting the ecosystem multilevel structure, intensity of the transformative capacity of biodiversity and society in the natural, industrial-technological, institutional systems in the course of environmental calculations, performance of analytical works, application of GIS, statistical data during practical and research classes. They contribute to the formation of experts ability to solve system complex tasks, integrating various methods of environmental research, modeling and prognosis of ecosystems dynamics, choice of optimal and environmentally suitable options and strategies of nature protecting activity, application of system-structural-functional approach to the environmental research.

Another important aspect of focusing on the formation of the professional and practical competence of future professionals is to choose the method of pro-

jects - a system of training, in which students acquire knowledge, skills and abilities of the design, planning and implementation of progressively complicated practical tasks. Students carry out projects in a wide range of problem environmental tasks: creative, environmental, nature conservation, informational, communication, etc. The value of this method is the use of independent designing by students as the main way to their professional development. The advantage of this method is the ability to incorporate it into the existing organizational forms of educational process and the training content, provided by the state educational standards, including the system of postgraduate education, provision of humanistic and intellectual training.

In the system of postgraduate education, trainings are widely used, as a method of practical teaching, for a variety of professional subjects, as they serve to consolidate a certain reaction, action, method, ability through repetition of exercises; professional and personal development; it is a complex of intensive methods of transforming influence on personality and psycho-socio-pedagogical influence on groups.

Formally, the training is a group session under the supervision of a teacher aimed at developing personal qualities of individuals, better understanding of oneself and others, one of the specific ways to obtain personal experience, where the basis of any training is a group work, which makes it a very convenient technology of influencing the personality in specially organized group activities.

The professional training is a system of actions and tasks aimed at development, creation, correction of necessary professional skills, development of professional skills, updating professional skills, which varies depending on those professional competencies and abilities, which are absent or lacking in the specialists experience to effectively perform professional activities under modern conditions, namely: formation of the integral understanding of the subject of future professional activity (training of the labor unit); formation of certain types of professional activity or professional communication (for example: research activities); development of motivational sphere as a search for new motives and values for the new system of goals for professional activity (motivational professional training); stimulating needs and abilities and self-expression in professional activity (training of individuality in professional activity); induction to the process of constant professional self-improvement, testing of various strategies of professional growth (training of professional self-improvement), etc.

Conclusions

So, application of methods of practical training is based on the consequent and purposeful formulation of problematic environmental tasks for the trainees. It is the introduction of interactive methods in practical training that forms the corresponding perception, vision, interpretation of environmental problems, the

type of comprehension for the systematic analysis of the environmental quality, the substantiation of the ways of their environmental optimization, modeling the state and development of ecosystems, as well as the production of independent algorithms from the solution of professional-practical tasks.

References

Erhanova, N. (2008). *Methodology of Professional Training*. Moscow: Academy.

Drobnokhod, M. (2010). On the Reform of Ukraine's Educational Sector in the Context of the Problems and Trends of the Globalized World. *Education and Management*, *13*(4), 7–17.

Kuzminsky, A. (2005). *Pedagogy of Higher Education: Manual*. Kyiv: Knowledge.

Levkovsky, K., Stepanenko, S., Timoshenko, N. (2009). Education for Sustainable Development. *Higher School*, *5*, 28–39.

Ozerianska, A., Mityrasova, O. (2014). *Features of Practical Training of Students-environmentalists*. Lviv: Lviv Polytechnic.

Sysoeva, S. (2010). Interactive Adult Training Technologies. *Native School*, *11*, 3–8.