

Model of usage of geoinformation technologies during formation of environmental competence of future mining engineers



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Abstract

The article reveals the model of usage of geoinformation technologies during formation of environmental competence of future mining engineers.

Key words: ENVIRONMENTAL COMPETENCE, FUTURE MINING ENGINEER, MODEL, SUSTAINABLE DEVELOPMENT.

Prerequisite for development of methodology of usage of geoinformation technologies as a mean for formation of environmental competence of future mining engineers is the solution of the following specific tasks of research: determination of major factors of modernization of professional education of future mining engineer; theoretical justification of competence system of future mining engineers; defining the structure of environmental competence of future mining engineers; earmarking of geoinformation technologies, application of which promotes safe activity of mining plants.

In result of solution of the first task, the major factors for modernization of professional education of future mining engineers is the public contract for preparation of competent specialists were determined. They are specified in the state industry standards of higher education and in the society sustainable development [1; 2; 3].

In result of solution of the second task, it was stated that development of competency

building approach to professional education happens, on the one side, under the influence of public contract on the preparation of competent specialists, on the other side – it influences on the formation of such contract in the direction of changing of state industry standards of higher education.

Application of competency building approach to modernization of state industry standards of higher education leads to the necessity of theoretical justification and development of competence system of future mining engineers, the component of which are environmental competences.

In result of solution of the third task it was stated that formation of environmental competence of future mining engineer happens within professional education.

In result of solution of the forth task it was concluded that development of ICT promotes the changes of production technological mode (including mining production), which provides stable technological development.

In their turn the requirements for stable social, economical and environmental society development induce to definition of ICT focused on their support. Securing of sustainable development of mining industry required definition of ICT, which consider scale and influence of mining production – means of ICT.

The outer shell of the model is formed by the major factors of modernization of professional education of future mining engineers and preparation basis of competent mining engineer.

The inner shell of the model is connected with the outer one in the following way: system of competences; environmental competences of future mining engineer; formation of professional competences while studying, in the one hand it is provided by technically sufficient usage of ICT and in the other hand acquirement of professionally oriented means of geoinformation technologies acts to rise ICT-competence of specialist (in particular in geoinformatics).

The inner shell of the model reflects the formation of environmental competency by means of geoinformation technologies during professional education, which provides this process. Purposive formation of environmental

competence by means of geoinformation technologies happens within special course of study of “Ecological geoinformatics”, three-component structure of methodic educational system of which is shown in the central part of inner shell of the model: learning needs; education content; education technology (forms, education organization, means and ways of education, where means of geoinformation technologies are the basic). Determination of education technology in the structure of methodic system of special course of study of “Ecological geoinformatics” is connected with the fact that the acquired while studying abilities concerning the usage of means of geoinformation technologies for solution of environmentally oriented tasks of professional activity of mining engineer are further used during study of the other disciplines of professionally practical training and accomplishment of graduation works.

Initial part of the model of usage of geoinformation technologies in formation of environmental competence of future mining is environmentally competent mining engineer, who is able to use geoinformation technologies in professional career effectively.

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