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Engineer pedagogiks

Environmental competency of future mining engineers

Environmental competencies of future mining engineers are determined in this article.

Key words: *environmental competency, future mining engineer, Law on mining, sustainable development.*

The main regulatory document determining the judicial and basic arrangements for the activity of mining engineers concerning mining works performance, securing emergency protection of mining plants, establishments and organizations is the Law on mining of Ukraine [1, article 5].

A.M. Khasna [3] considers the contribution of the principals stated in the article 7 of the Low on mining of Ukraine into social, economical, ecological and technical development as the function of sustainable development – model of resource use, focused on the satisfaction of human’s wants when preserving of the environment in such a way, that all these wants could be satisfied not only by current generations but also by future ones. In such a way state policy in mining industry focused on the sustainable development of mining industry, science and education.

The main environmental requirements in the field of mining works, prevention of ill effect of mining works and securing of ecological safety during mining works is not only a subject matter of certain articles of the Low on mining of Ukraine, but also obligate constituent of preparation of environmentally competent mining engineer [4; 5; 6].

The results of determining and analysis of environmental competence of future mining engineer are given below.

N.M. Bibik determines competence as “estranged from the subject predetermined social norm (requirement) for educational attainment..., necessary for its qualitative and productive activity in certain field, i.e. socially fixed result” [2, 409]. Precisely in such a way, as predetermined requirement, each of the competences of mining engineer was determined. But “the result of competency acquirement is the competency, which supposes personal characteristic, attitude to the nature of business. Competences may be taken out as real requirements for acquisition of knowledge, work methods, experience of behavior in certain branch of knowledge, qualities of a person, which acts in society” [8, 409].

By definition of DeSeCo specialists ecological sustainability is the basis for key competences of a person connected with his success in society [7, 6]. Consideration of environmental competency is better to fulfill at three levels:

- On the educational level of environmental culture and ecological conscienceness (works of S. V. Alekseev, A. V. Gagarin, A. A. Glazachova, L. S. Glushkova, N. V. Gruzdeva, D. S. Ermakov, A. V. Makoedov, S. Yu. Nefedova, N. V. Romeyko, L. M. Titarenko, L. S. Chopenko, Yu. A. Sharonova).
- On the obligatory for all professional level of ecological literacy (works of S. V. Alekseev, A. V. Gagarin, G. M. Galiev, L. S. Glushkova, A. V. Gurenkov, A. M. Dzyatkovskaya, D. S. Ermakov, S. A. Zhdanova, A. N. Zakhlebnyy, K. A. Makarova, N. V. Nasurova, N. Yu. Oleynik, I. V. Petrukhin, L. E. Pistunov, N. V. Romeyko, L. M. Titarenko, V. I. Tomakova, A. L. Khripunova, A. A. Shul'pin).
- On the special professional level of environmental competence (works of E. L. Bazarov, V. F. Budnik, L. I. Budnik, G. M. Galiev, A. V. Gagarin, A. A. Litvinova, S. Yu. Nefedova , L. E. Pistunov, A. N. Ryabov, A. L. Khripunov, Yu. A. Sharonova, A. A. Shul'pin).

The carried out analysis gives the possibility to determine *environmental competence of future mining engineer* as personal formation, which includes the acquired during preparation profession-oriented environmental awareness

(cognitive component), adopted ways for securing environmentally safe mining works (praxeological component) in the interest of sustainable development (axiological component) and the qualities of socially responsible ecological behavior (socially- behavioral component) are formed.

By definition, formation of environmental competency of future mining engineer happens during professional education of bachelors, specification 6.050301 “Mining”, that is why for determination of environmental competencies we will refer to the components of developed system of socially-personal, instrumental, general scientific, general professional and specially professional competences of future mining engineer (fig. 1.3).

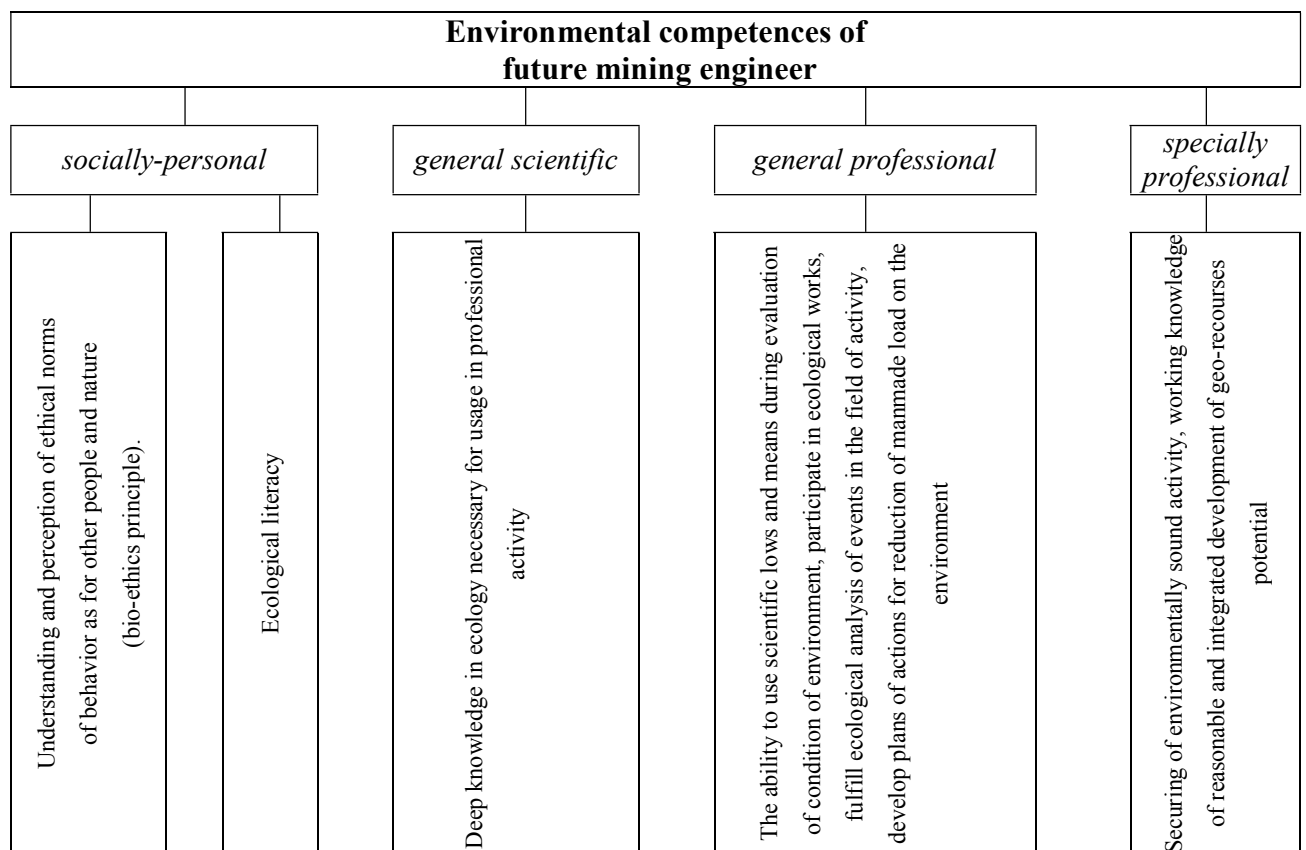


Figure 3. Environmental competences of future mining engineer

Summarizing, we would like to mark that environmental competency of future mining engineer – personal education, which comprises the acquired during

preparation professionally oriented environmental knowledge (cognitive component), adopted ways for securing environmentally safe mining works (praxeological component) in the interests of sustainable development (axiological component) are foremost, the qualities of socially responsible environmental behavior (socially-behavior component) are formed.

Formation of environmental competency is fulfilled during acquirement of the following:

- Socially-personal competences: understanding and perception of ethical norms of behavior in respect to other people and nature (bioethics principals); ecological literacy;
- General scientific competence: deep knowledge in ecology necessary for usage in professional activity;
- Generally professional competence: the ability to use scientific laws and means during evaluation of environmental condition, participate in environmental works, make ecological analysis of events in the field of activity, develop plans on events concerning reduction of manmade load on the environment;
- Special professional competence: securing of ecologically balanced activity, working knowledge of reasonable and integrated development of geo-resources potential.

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