



UDC 378.14.014.13

<https://doi.org/10.33271/mining13.01.080>

### LIFELONG LEARNING COMPETENCE DEVELOPMENT OF MINING STUDENTS AND ACADEMIC INTEGRITY: CASE STUDY OF LANGUAGE COURSES

O. Nesterova<sup>1\*</sup><sup>1</sup>Dnipro University of Technology, Dnipro, Ukraine\*Corresponding author: e-mail [olnesterova1@rambler.ru](mailto:olnesterova1@rambler.ru), tel. +380979366764

#### ABSTRACT

**Purpose.** State-of-the-art description of faculty members (teaching language courses) attitude towards distinguishing of life-long learning competences evaluation and on purpose formation for mining students.

**Methods.** The data were obtained from the paper questionnaires developed on the basis of theoretical analysis of scientific sources considering the issues of lifelong learning and academic integrity concepts and their implementation into the mining students training.

**Findings.** The peculiarity of faculty members delivering language courses to lifelong learning competences of mining students consists in the fact that the teaching staff recognizes the importance of lifelong learning competences for modern professional in mining, but does not consider them as teaching goals. Mathematical competence and basic competences in science and technology, sense of initiative and entrepreneurship, and communication in foreign language are considered as the most important competences. As it was demonstrated, the efforts aimed at the development of lifelong competences do not correspond to the rating, as the faculty members consider other competences as the primary goals of their courses.

**Originality.** The attitude of faculty members delivering language courses to mining students towards lifelong learning competence described in the Reference Framework of European Commission was investigated. The attitude of faculty members to the issue of lifelong learning competence formation was considered as a reason of low efficiency of students' knowledge formation resulting in their poor lifelong learning and academic integrity skills.

**Practical implications.** The results obtained are important for development of master and bachelor programmes in mining aimed at international level, as they enable modernization of existing programmes with respect to modern concepts of lifelong learning and academic integrity.

**Keywords:** *mining students, lifelong learning, lifelong learning competences, academic integrity, questionnaire, professional development*

#### 1. INTRODUCTION

Modern societies face various challenges particularly technological ones. So, every social community needs professionals being able to perform their professional functions under changeable conditions. We know a lot about knowledge aging, so there exists an innovative educational concept for coping with this difficulty. It is referred as lifelong learning. Many states support and promote lifelong learning as means of sustainable development maintenance. Moreover, they encourage professionals of various fields to deepen and modernize their knowledge and thus widen their professional horizons.

Higher education is considered to be a platform for introducing such knowledge and skills and training students'

readiness to lifelong development of their skills with respect to changes of technological base and principles and approaches to environment friendly type of activity.

The issue of lifelong learning in modern education systems is considered by a range of researchers. The main research areas consist in the specifics of lifelong learning implementation in different educational programmes (Akkoyuna & Erkan, 2014), lifelong learning in different world countries (Martinez-Mediano & Lord, 2012). The concept of lifelong learning as one of priorities of engineers training in the modern globalized society was considered by such researchers as K.Y. Kapusuz and S. Can (Kapusuz & Can, 2014); N. Al-Masoud, V. Naoumov, S.J. Kirstukas (Al-Masoud, Naoumov, &

Kirstukas, 2013); C. Martinez-Mediano and S.M. Lord (Martinez-Mediano & Lord, 2012). The practical and theoretical aspects of different modern learning environments as an important support condition of lifelong learning strategy development are discussed in the papers by M.T. Bandaya, M. Ahmed and T.R. Jan (Banday, Ahmed, & Jan, 2014); D. Kubečková (Kubečková, 2014); M.J. Prince, C.R. Stefanou, J.D. Stolk and J.C. Chen (Prince, Stefanou, Stolk, & Chen, 2012) and other researchers. The papers by O. Oviedo-Trespalacios, L.P. Angarita, M. Maestre-Meyer and C. Berdugo Correa (Oviedo-Trespalacios, Angarita, Maestre-Meyer, & Correa, 2015); M. Lanz, A. Lobov, K. Katajisto, P. Mäkelä (Lanz, Lobov, Katajisto, & Mäkelä, 2018) are devoted to the process of development of lifelong learning competence in engineering students are of great importance for the studies in the field. Modern researchers also consider the ways and tools of encouraging students to their continuous self-development via lifelong learning (Mohammed, Mohssine, M'hammed, Mohammed, & Abdelouahed, 2015).

The wide range of studies focusing on the lifelong learning and its aspects enables generalization expressed by M. Kalz as “any purposeful learning activity undertaken on an on-going basis targeted at the increase of knowledge, skills and competences” (Kalz, 2015) can be considered as lifelong learning. Such a wide approach makes it difficult to provide a comprehensive and reliable estimation of its efficiency. This is due to lack of reliable assessment complex ways and tools. Their importance is pointed out by Leonard Baird: “by developing comprehensive assessments, we can understand how to organize lifelong learning to meet the needs and backgrounds of different kinds of students, we can be more certain that the intended experience is the one that students actually have, we can assess the extent to which both program goals and student goals are met, and we can examine the effects of lifelong learning in the long run” (Baird, 2009).

The other key idea lies in the description of universities and their role “in promoting lifelong learning through research on the topic, training of teachers to believe in the importance of lifelong learning and serve as role models”. The developers of the Academic honesty in the IB educational context recommendations state that School policies should ensure that articulation of the policy occurs beyond the primary classroom and incorporates future expectations of the students as they progress across the educational continuum in order to allow them to understand and engage in the development of a lifelong process that emphasizes the importance of personal responsibility and academic honesty (Academic honesty..., 2014). But the implementation of this idea is quite complicated process. The problem lies in the fact that educators being aware of importance of lifelong learning paradigm do not recognize the need in purposeful activity aimed at development of students' skills in the field of self-education. This means that they do not pay attention to the knowledge and skills for further development of student's personality, but focus on knowledge transfer for mastering the definite course and obtaining the planned competency.

Such attitude becomes an obstacle to creation of modern system of students training. So, the measures aimed at providing educators with the proper knowledge and skills in the field of lifelong learning competence formation are of great importance for the improvement of students' results and promoting their future development. The measures development is to be based on the knowledge of the current state of the situation. So, the studies of educators' attitude to the development of lifelong competences are needed to consider the problem and distinguish the ways of its solution.

## 2. METHODOLOGY

To study the educators' attitude it is convenient to use a specific questionnaire reflecting the most important issues. We have developed the questionnaire consisting of 20 questions. It was aimed at considering two general problems – recognition of importance of lifelong learning competence for students as future professionals and specific activities for such competence development.

The questionnaire was anonymous, but it included the point about the age of a respondent, as this information is useful for further strategic planning. We also distinguished three groups of respondents and considered their forms separately. The criterion for group distinguishing was based on the type of the course delivered by an educator. So, we divided the respondents into the following groups:

- 1) professors of languages;
- 2) professors of humanities;
- 3) professors of applied courses in mining.

This division reflects the goals of the disciplines taught. Language teaching is also aimed at providing students with the general instrumental skills of information perception (different types of reading, translation etc.) and processing (critical thinking). These skills are important not only for language mastering, but also for learning and self-development. Professors of humanities provide students with the proper worldview, beliefs, motivation which make it possible to recognize the need in lifelong learning as precondition of continuous self-development.

Professors of applied courses in mining provide students with the basic knowledge in their field of activity and speciality needed for their further development and perfection as professionals in mining. The knowledge and skills are integral part of their professional identity, so they are to become helpful for obtaining the deeper and more modern knowledge and transforming their skills and knowledge into the competence.

The research activity consisted of three main stages. The first stage of our study was devoted to the development of research strategy, its purposes and methodology based on the study of foreign and domestic scientific sources.

The second stage was aimed at collecting of data from the professors of languages including foreign languages and also students' first language. Then we also made a survey among the professors of humanities professors of applied courses in mining.

The third stage consisted in the collected data generalization and interpreting, as well as recommendation development for the efficiency improvement of lifelong learning competence development for mining students.

### 3. RESULTS AND DISCUSSION

Having analyzed the results of studies of modern researchers we can point out that they are based on the Reference Framework of European Commission (The key competences..., 2006) and adapted to the requirements and peculiarities of different fields of knowledge and national background. The document sets out eight key competences needed for lifelong learning process:

- 1) communication in the mother tongue;
- 2) communication in foreign languages;
- 3) mathematical competence and basic competences in science and technology;
- 4) digital competence;
- 5) learning to learn;
- 6) social and civic competences;
- 7) sense of initiative and entrepreneurship;
- 8) cultural awareness and expression (The key competences..., 2006).

The competences described are also important for academic integrity of mining students, as the knowledge and skills correlate with the process of development of academic integrity values distinguished by T. Fishman (Fishman, 2014).

As result of scientific sources study we have suggested that the following conditions may be considered as preventive ones for the efficient process of mining students training in the field of lifelong learning and academic integrity:

- the educators do not recognize lifelong learning competence as a teaching goal;
- the educators do not pay attention to the development of needed skills and knowledge;
- the educators do not provide students with tools for lifelong learning competence development.

To decide the state of the art of this problem we have developed the questionnaire providing the information on the three distinguished issues. We considered the eight key competences for lifelong learning for questionnaire development. The respondents were asked to fill in the printed forms of the questionnaire.

The respondents were the professors of languages delivering lectures and practical classes in foreign languages (Foreign language for specific purposes, Foreign language for academic purposes, business courses) and courses in students' first language (Ukrainian for professional purposes). We also considered the professor delivering language courses for foreign students with the English language as the language of instruction (Ukrainian for foreign students, Foreign language for academic purposes).

The survey has shown that the importance of the eight key competences is recognized by 88% of respondents, but only 54% of them consider the competences as a base for lifelong learning of mining students. The Table 1 shows the results of survey of the competences importance from the educators' point of view. The respondents were asked to estimate each competence in the range from 1 to 8 (1 for the most important, 8 for the least important).

It is notable that the respondents considered cultural awareness and expression, social and civic competences, and learning to learn as the least important competences.

**Table 1. Lifelong competences importance scale**

Competence	Grade of importance		
	1 – 3	4 – 6	7 – 8
Communication in the mother tongue, %	80	15	5
Communication in foreign language, %	92	8	0
Mathematical competence and basic competences in science and technology, %	96	4	0
Digital competence, %	77	22	1
Learning to learn, %	54	9	37
Social and civic competences, %	41	24	35
Sense of initiative and entrepreneurship, %	84	26	0
Cultural awareness and expression, %	18	36	46

On the contrary mathematical competence and basic competences in science and technology, communication in foreign language, and communication in the mother tongue competences were mentioned as the most important ones. This may mean the educators consider communication in both foreign and native language as a tool for professional interaction.

We should also point out that the importance of most competences for lifelong learning maintenance was estimated to be high (primarily grades 1 – 3) by almost all respondents. This demonstrates that the educators recognize the role of the competences for the development of professional in the field of mining.

But the recognition does not always mean the immediate putting the issue into practice. So, the other group of questions was devoted to considering the problem of the skills and knowledge development needed for the competences formation. The respondents were asked to state, whether they develop the competences supporting students' lifelong learning under their courses curriculum. The tips "yes, this is my primary goal", "yes, I make some efforts in this direction", "yes, but accidentally", "no" or "cannot state" were proposed as possible answers. The Table 2 shows the percentage of answers for each competence.

As it is evident from the table, the educators consider the development of lifelong learning competences as a part of their subjects. Mathematical competence and basic competences in science and technology being considered as the most important competence for mining students is almost not mentioned as the primary goal by the respondents. This is, however, explained by the specific of the courses taught by the educators. The high percentage of professors considering communication in foreign language and simultaneous development of cultural awareness and expression as the primary goal and low percentage of those who develop communication in the mother tongue may result from too formal approach to language teaching or lack of time for course delivering.

We also should point out the low quantity of professors developing the learning to learn competence.

**Table 2. Lifelong competences as teaching goals scale**

Competence	Answers				
	yes, this is my primary goal	yes, I make some efforts in this direction	yes, but accidentally	no	cannot state
Communication in the mother tongue	12	25	21	34	8
Communication in foreign language	47	31	14	6	2
Mathematical competence and basic competences in science and technology	2	16	18	64	—
Digital competence	9	18	49	24	—
Learning to learn	5	24	32	21	18
Social and civic competences	31	24	38	—	7
Sense of initiative and entrepreneurship	4	12	27	38	19
Cultural awareness and expression	46	35	19	—	—

From our point of view, it should be considered as one of the most important purposes of any educational activity in modern changing society and under the conditions of knowledge aging. This idea correlates with those substantiated by the authors of the papers (Lanz, Lobov, Katajisto, & Mäkelä, 2018).

#### 4. CONCLUSIONS

To conclude we can point out the awareness of educators working with mining students in the issues of lifelong learning importance for modern professionals. Although the eight key competences determining the lifelong learning prospective of mining students considered by the Reference Framework of European Commission are implemented into the training framework and educational goals, they do not form a system and thus are not efficient. This also results in poor development of academic integrity knowledge and skills of mining students, as their educational activities are not maintained with the proper tools of academic integrity principles and values implementation.

The prospective of future studies may consist in the principles development of students' attitude towards the transforming of their learning style with respect to the requirements of lifelong learning paradigm and academic integrity, as well as in the theoretical substantiation of solutions of the considered issues.

#### ACKNOWLEDGEMENTS

The studies were not supported by any grant. The author is grateful for all recommendations from reviewers and editors.

#### REFERENCES

- Academic honesty in the IB educational context.* (2014). Cardiff, United Kingdom: International Baccalaureate Organization Ltd.
- Akkoyun, Y., & Erkan, T.E. (2014). Lifelong learning case study from Turkish public sector: business process management in social security operations. *Procedia – Social and Behavioral Sciences*, (116), 1154-1159. <https://doi.org/10.1016/j.sbspro.2014.01.361>
- Al-Masoud, N., Naoumov, V., & Kirstukas, S.J. (2013). Embedding lifelong learning in engineering courses. *ASEE Annual Conference & Exposition*. Atlanta, United States: American Society for Engineering Education.
- Baird, L.L. (2009). The nature of the evidence about lifelong learning: remapping the territory. *Annual SCUTREA Conference*. Cambridge, United Kingdom: University of Cambridge.
- Banday, M.T., Ahmed, M., & Jan, T.R. (2014). Applications of e-learning in engineering education: a case study. *Procedia – Social and Behavioral Sciences*, (123), 406-413. <https://doi.org/10.1016/j.sbspro.2014.01.1439>
- Fishman, T. (2014). *The fundamental values of academic integrity*. Clemson, United States: International Center for Academic Integrity, Clemson University.
- Kalz, M. (2015). Lifelong learning and its support with new technologies. *International Encyclopedia of the Social & Behavioral Sciences*, 93-99. <https://doi.org/10.1016/b978-0-08-097086-8.92006-3>
- Kapusuz, K.Y., & Can, S. (2014). A survey on lifelong learning and project-based learning among engineering students. *Procedia – Social and Behavioral Sciences*, (116), 4187-4192. <https://doi.org/10.1016/j.sbspro.2014.01.914>
- Kubečková, D. (2014). Lifelong learning as a part of training in the field of civil engineering. *Procedia – Social and Behavioral Sciences*, (141), 623-627. <https://doi.org/10.1016/j.sbspro.2014.05.109>
- Lanz, M., Lobov, A., Katajisto, K., & Mäkelä, P. (2018). A concept and local implementation for industry-academy collaboration and life-long learning. *Procedia Manufacturing*, (23), 189-194. <https://doi.org/10.1016/j.promfg.2018.04.015>
- Liashenko, I. (2018). Pre-university training in Ukraine: history and contemporary condition. *Future Human Image*, (10), 41-49. <https://doi.org/10.29202/fhi/10/4>
- Martinez-Mediano, C., & Lord, S.M. (2012). Lifelong learning program for engineering students. *Proceedings of the 2012 IEEE Global Engineering Education Conference*, 1-6. <https://doi.org/10.1109/educon.2012.6201072>
- Mohammed, A., Mohssine, B., M'hammed, E.K., Mohammed, T., & Abdelouahed, N. (2015). Eportfolio as a tool of learning, presentation, orientation and evaluation skills. *Procedia – Social and Behavioral Sciences*, (197), 328-333. <https://doi.org/10.1016/j.sbspro.2015.07.145>
- Oviedo-Trespalacios, O., Angarita, L.P., Maestre-Meyer, M., & Correa, C.B. (2015). Building the life-long learning competence in undergraduate engineering students with a laboratory practice in learning curve. *Procedia – Social and Behavioral Sciences*, (174), 2021-2026. <https://doi.org/10.1016/j.sbspro.2015.01.870>
- Prince, M.J., Stefanou, C.R., Stolk, J.D., & Chen, J.C. (2012). The effect of different active learning environments on student outcomes related to lifelong learning. *International Journal of Engineering Education*, 28(3), 606-620.
- The key competences for lifelong learning – a European framework is an annex of a recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning.* (2006). Luxembourg, Luxembourg: European Parliament.

## РОЗВИТОК КОМПЕТЕНЦІЙ СТУДЕНТІВ ГІРНИЧИХ СПЕЦІАЛЬНОСТЕЙ У СФЕРІ ОСВІТИ ПРОТЯГОМ ЖИТТЯ ТА АКАДЕМІЧНОЇ ДОБРОЧЕСНОСТІ (НА МАТЕРІАЛІ МОВНИХ КУРСІВ)

О. Нестерова

**Мета.** Визначення ставлення професорсько-викладацького складу (викладачів мовних курсів) до визначення компетенцій у сфері освіти протягом життя та їх цілеспрямованого формування у студентів гірничих спеціальностей на сучасному етапі.

**Методика.** Дані було отримано на основі аналізу паперових анкет, розроблених з урахуванням результатів теоретичного аналізу наукових джерел з проблем освіти протягом життя та академічної доброчесності, а також специфіки їх реалізації при підготовці студентів гірничих спеціальностей.

**Результати.** Специфіка ставлення викладачів мовних курсів до визначення компетенцій у сфері освіти протягом життя та їх цілеспрямованого формування в студентів гірничих спеціальностей полягає в тому, що викладачі визнають важливість компетенцій у сфері освіти протягом життя для сучасних фахівців-гірників, але не розглядають їх як навчальну мету. Математична компетенція та основні компетенції у науці й технологіях, ініціативність і підприємницькі якості, а також комунікація іноземною мовою розглядаються як найважливіші компетенції. Проте, як свідчать отримані дані, визначений рівень важливості компетенції не означає визнання її пріоритетною у навчальному процесі, оскільки педагогічні працівники при формулюванні цілей освітньої діяльності опираються на інші компетенції.

**Наукова новизна.** Розглянуто ставлення викладачів мовних курсів для студентів гірничих спеціальностей до визначення компетенцій у сфері освіти протягом життя, описаних у Рекомендаціях Європейської комісії. Ставлення викладачів до формування компетенцій у сфері освіти протягом життя розглянуто як причина низької ефективності формування знань студентів, що зумовлює недостатній рівень знань студентів у сфері освіти протягом життя та академічної доброчесності.

**Практична значимість.** Отримані результати є важливими для створення магістерських та бакалаврських міжнародних освітніх програм, адже їх врахування дозволить вдосконалити вже існуючі програми з урахуванням сучасних концепцій освіти протягом життя та академічної доброчесності.

**Ключові слова:** студенти гірничих спеціальностей, освіта протягом життя, компетенції у сфері освіти протягом життя, академічна доброчесність, анкета, професійний розвиток

## РАЗВИТИЕ КОМПЕТЕНЦИЙ СТУДЕНТОВ ГОРНЫХ СПЕЦИАЛЬНОСТЕЙ В СФЕРЕ ОБРАЗОВАНИЯ НА ПРОТЯЖЕНИИ ЖИЗНИ И АКАДЕМИЧЕСКОЙ ДОБРОПОРЯДОЧНОСТИ (НА МАТЕРИАЛЕ ЯЗЫКОВЫХ КУРСОВ)

О. Нестерова

**Цель.** Определение отношения профессорско-преподавательского состава (преподавателей языковых курсов) к определению компетенций в сфере образования на протяжении жизни и их целенаправленному формированию у студентов горных специальностей на современном этапе.

**Методика.** Данные были получены на основе анализа бумажных анкет, разработанных с учетом результатов теоретического анализа научных источников по проблематике образования на протяжении жизни и академической добропорядочности, а также специфики их реализации при подготовке студентов горных специальностей.

**Результаты.** Специфика отношения преподавателей языковых курсов к определению компетенций в сфере образования на протяжении жизни и их целенаправленному формированию у студентов горных специальностей заключается в том, что преподаватели признают важность компетенций в сфере образования на протяжении жизни для современных специалистов-горняков, но не рассматривают их в качестве образовательной цели. Математическая компетенция и основные компетенции в науке и технологиях, инициативность и предпринимательские качества, а также коммуникация на иностранном языке рассматриваются как важнейшие компетенции. Но, согласно полученным данным, определенный уровень важности компетенции не означает ее приоритетности в учебном процессе, так как педагоги при формировании целей учебной деятельности опираются на другие компетенции.

**Научная новизна.** Рассмотрено отношение преподавателей языковых курсов для студентов горных специальностей к определению компетенций в сфере образования на протяжении жизни, описанных в Рекомендациях Европейской комиссии. Отношение преподавателей языковых курсов к формированию компетенций в сфере образования на протяжении жизни рассматривается как причина низкой эффективности формирования знаний студентов, обуславливающее недостаточный уровень знаний студентов в сфере образования на протяжении жизни и академической добропорядочности.

**Практическая значимость.** Полученные результаты имеют значение для разработки магистерских и бакалаврских международных образовательных программ, т.к. они позволяют усовершенствовать уже существующие программы с учетом современных концепций образования на протяжении жизни и академической добропорядочности.

**Ключевые слова:** студенты горных специальностей, образование на протяжении жизни, компетенции в сфере образования на протяжении жизни, академическая добропорядочность, анкета, профессиональное развитие

**ARTICLE INFO**

Received: 10 October 2018

Accepted: 12 February 2019

Available online: 21 February 2019

**ABOUT AUTHORS**

Olha Nesterova, Candidate of Pedagogical Sciences, Associate Professor of the Translation Department, Dnipro University of Technology, 19 Yavornytskoho Ave., 49005, Dnipro, Ukraine. E-mail: [olnesterova1@rambler.ru](mailto:olnesterova1@rambler.ru)