Shaping Information and Communication Competence of Future Lecturers of Professional Education (Occupational Safety and Health) through the Course «Pedagogy of Higher Education»

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Формування інформаційно-комунікаційної компетенції майбутніх викладачів професійної освіти (охорона праці) у процесі вивчення дисципліни «Педагогіка вищої школи»

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Abstract

The article deals with theoretical approaches to shaping information and communication competence of future lecturers of professional education (occupational safety and health) during professional training in higher education institutions, in particular through the course on pedagogy of higher education. The concept of the information and communication competence is defined as a special quality, which requires future specialists to have relevant knowledge, abilities and skills to navigate in information space with the aim to obtain and apply information sources and information and communication technologies in future professional activities. It is found that vocational training of future lecturers of professional education (occupational safety and health) should be aimed at shaping information and communication competence. Therefore, it is important that innovative information and communication technologies should be incorporated in the educational process. It is clarified that the process of shaping information and communication competence of future lecturers of professional education (occupational safety and health) should be understood as a professional ability to navigate in information space in order to obtain (search, select and analyze) information sources and effectively apply information and communication technologies in future professional activities. It is specified that there are some effective ways to shape information and communication competence of future lecturers of professional education (occupational safety and health) through the course on pedagogy of higher education during professional training in higher education institutions. Thus, master students in professional education (015 Occupational safety and health) from Pereiaslav-Khmelnytskyi Hryhorii Skovoroda State Pedagogical University were involved in the research. It is proved that the effective method of shaping information and communication competence of future lecturers of professional education (occupational safety and health) is the project method, which combines theoretical knowledge and their practical application when solving professional problems. It contributes to developing cognitive skills, shaping the ability to independently construct their knowledge, navigate information space, etc.
Key words: higher education, competency-based approach, education informatization, information and communication competency, the course on pedagogy of higher education, future lecturers of professional education (occupational safety and health).

References
Introduction

Problem statement. Such aspects as globalization and democratization processes, a growing role of knowledge and practical experience for its development and informatization of many areas of human life greatly increase the requirements for lecturers’ qualifications, competencies and competitiveness in the global labour market, their ability to adapt to modern fast-changing socioeconomic conditions and scientific and technological advances, innovation skills, creative and system thinking. This, in turn, causes the need for new educational approaches to professional training of future lecturers (occupational safety and health).

The main global directions of education modernization include competency-based approach and education informatization as a powerful means of not only informational, professional, but also specialist training.

In the context of Ukraine’s integration into the European Higher Education Area, an important component of professional training of future lecturers (occupational safety and health) consists in shaping their information and communication competence aimed at ensuring their ability to apply the latest information technologies in everyday life and in future professional activities.

Analysis of recent researches and publications. The content analysis of scientific sources shows that Ukrainian and foreign scholars have paid considerable attention to theory and practice of implementing competency-based approach into teacher training (V. Baidenko, N. Biblyk, L. Horuzha, A. Khutorskyi,
The process of reforming education in the context of information society development was studied by N. Bibyk, S. Honcharenko, A. Hurzhii, V. Kremen, V. Madzihon, Ye. Mashbyts, L. Vashchenko, M. Zhaldak, I. Ziaziun etc. The various aspects of information technology use related to enhancing the quality of the education process were disclosed by V. Bykov, R. Hurevych, V. Klochko, A. Kolomiiets, T. Koval, V. Rudenko, V. Serhienko, M. Zhaldak, I. Zhuravlova et al.

Many foreign scholars (K. Ahmad, T. Bender, G. Corbett, M. Connel, U. Dayzard, R. Earle, Dzh. Helbrayt, M. Kompf, M. Makklyuen, M. Porat, M. Rodgers, S. Rychen, L. Salganik, R. Sheppard, F. Stoller, J. Spector, E. Toffler, N. Wendworth, K. Whitehouse et al.) have explored this problem, too. One should pay specific attention to the research by J. Spector (competencies for online teaching) and M. Kompf (the seduction of knowledge and learning: information and communications technology).

**Unknown aspects of research problem.** However, the existing studies on the process of shaping information and communication competence of future lecturers (occupational safety and health) cover only certain aspects of this research problem. Indeed, one should further study the content, forms and methods of shaping information and communication competence of future lecturers (occupational safety and health) during professional training and attempt to incorporate modern information and communication technologies and the project method into the course on higher education.

**Research aim.** The research aims to determine the ways of shaping information and communication competence of future lecturers of professional education (occupational safety and health) through the course on pedagogy of higher education during professional training in higher education institutions.

**Material and research methods**

The research involved master students in professional education (015 Occupational safety and health) and was conducted at Pereiaslav-Khmelnitsky Hryhorii Skovoroda State Pedagogical University. The following research methods were
used: theoretical methods (content analysis of scientific sources on the research problem; clarification of the concept of information and communication competence; synthesis, comparison, specification, systematization and generalization with the aim of selecting forms and methods to shape information and communication competence of future lecturers (occupational safety and health); identification of ways to shape information and communication competence of future lecturers (occupational safety and health) through the course on pedagogy of higher education during professional training in higher education institutions); empirical methods (observation, interviews). These methods prove the effectiveness of the project method in relation to the education process in higher education institutions, which makes it possible to supplement an educational material with a visual demonstration of various theoretical information, combine texts, tables, illustrations, create PowerPoint presentations, etc.

**Results and discussion**

As a result of the increasing role of knowledge and technologies in the life of society and the intensifying economic and cultural globalization, education is most commonly viewed as an effective tool for training specialists, who are able to live under rapidly changing conditions. The paramount social and economic transformations in Ukraine, which take place on the path to European Higher Education Area, greatly increase the requirements for the education system since it plays a leading role in shaping information and communication competence, revealing scientific and intellectual potential of the country. Consequently, the requirements for professional training of future lecturers of professional education (occupational safety and health) are growing more complicated in accordance with the needs of society and scientific and technological progress. Therefore, one of the relevant conditions for professional training of competitive lecturers of professional education (occupational safety and health) lies in shaping their information and communication competence with the aim of enhancing their professional performance.

Today, the modernization of higher education around the world includes competency-based approach and education
informatization. The latter is a pedagogical process rather than a technological one since it generates significant changes in goals, content, methods and forms of professional training of higher education graduates. One should pay particular attention to the ability and readiness of future lecturers of professional education (occupational safety and health) to realize the acquired knowledge, skills and abilities in professional activity, be mobile and creative. Thus, vital competencies allow the individual to navigate in modern society, information space, be competitive in a rapidly changing labour market, etc. A competent specialist possesses not only certain knowledge and skills but also is able and willing to apply them in professional activities, go beyond the scope of his/her profession and strive for self-development and self-improvement.

Competency-based education (CBE) originated in the late 1960s and the early 1970s in the USA. Since the 1980s, it has been used in Ukraine due to changes in the world’s labour market. Nowadays, competency-based approach in education is recognized as the driving force behind the modernizing of the education process, which shapes and develops core and subject competencies. This process is primarily aimed at shaping overall competency being a set of core competencies and an integrated personality trait, which should be shaped during the education process and include knowledge, skills, attitudes, experience and behavioural patterns (Bibik, Vashchenko, Lokshyna, Ovcharuk, 2004).

Thus, the incorporation of competency-based approach in the education process is now conditioned by social and economic factors and the modernization of higher education in order to fully integrate it into European Higher Education Area, as well as the increasing requirements of society for professional competency of graduates, the need of every graduate to be competitive, mobile and competent. The transition of Ukrainian higher education to the principles of competency-based approach implies the shift in focus from the process to learning outcomes in the practical context.

The main concepts of competency-based approach are «competency» and «competence». The author of the article agrees
with S. Sysoieva and I. Sokolova that competency is a set of shaped competences. Therefore, competence is subject-oriented, namely, it includes certain powers and implies certain knowledge, abilities, skills, attitudes, which are necessary for effective professional activity in a particular field. Competency, however, is a concept more closely related to personality that is a range of certain powers and a more profound comprehension of professional activity (Sysoieva, 2010).

According to the Council of Europe experts, modern higher education graduates should acquire the following core competencies: social competencies – to participate in making joint decisions, functioning and improving democratic institutions and resolving conflicts by non-violent means; communicative competencies – tolerance, communication skills; intercultural competencies – understanding of differences, understanding of each other, the ability to live with people of different cultures, languages, religions; information competencies – computer literacy, the ability to master new technologies in the professional field; learning competencies – the ability to learn throughout life, which is the basis of continuing professional education (Khutorskyi, 2003).

Consequently, many scholars and researchers view competency as those indicators, which determine the readiness of higher education graduates for life, further personal development and active participation in the life of society since nowadays one should be able not only to apply one’s knowledge and skills but also be prepared to change and adapt to the new needs of the labour market, operate and manage information, be active, make quick decisions, learn throughout life. Competency is manifested through competences since their level determine the level of important professional skills, such as communication skills (the ability to interact with others and work in a team) and informational skills (the ability use the latest information technologies, search, analyze and transfer the necessary information).

The active development of information society has increased the role of information and communication
technologies in all spheres of life, especially in science and education. Therefore, the most acute issue affecting the modern information society, where the main values are knowledge and information, implies shaping information and communication competence, which is very important for future lecturers of professional education (occupational safety and health) since any activity involves working with information. Information and communication competency is manifested in the ability to think technologically and covers analytical, project, prediction skills in acquiring and applying information. Future lecturers of professional education (occupational safety and health) who need to operate within information society should be able to obtain, store, process and transmit information, use information and information according to their own needs and requirements of modern education,. Thus, they should be able to create text documents, tables, drawings, diagrams, presentations and use Internet technologies, local area networks, databases and develop their own electronic products (workshops, visual aids) and use and combine ready-made electronic products (electronic textbooks, encyclopedias, curriculums) and learn how to apply information and communication technologies in their professional work rationally.

In the scientific context, the concept of information and communication competency has many interpretations. P. Bespalov defines it as an integral characteristic of the individual, which implies motivation to master relevant knowledge and the ability to solve problems in educational and professional activities with the help of computer equipment and computer intelligence techniques. It is being shaped both at the stages of acquiring computer skills and using them as a means of further training and professional activity and is regarded as one of the aspects of personal maturity (Bespalov, 2003). S. Litvinova believes that information and communication competency is the subject teacher’s ability to navigate information space, obtain information and operate it in accordance with his/her own needs and requirements of modern high-tech society (Litvinova, 2008). M. Lebedeva and O. Shylova interpret it as the ability to solve educational, professional and life problems using information and communication technologies (Lebedeva, 2004).
Thus, information and communication competence is a personal quality, which requires future specialists to have relevant knowledge, abilities and skills to navigate in information space with the aim to obtain and apply information sources and information and communication technologies in future professional activities.

Therefore, the process of shaping information and communication competence of future lecturers of professional education (occupational safety and health) should be understood as a professional ability to navigate in information space in order to obtain (search, select and analyze) information sources and effectively apply information and communication technologies in future professional activities.

In this regard, there appears to be an urgent need to prepare highly qualified specialists, future lecturers of professional education (occupational safety and health), who are able to apply information and communication technologies while working with various types of information: to edit information; to store, copy and transfer information to electronic multimedia and over the Internet; to present information using different presentation technologies; to process electronic documents; to use computers while solving practical tasks; to work in global and local networks and with computer programmes; to use modern sources and methods of information processing (electronic textbooks, translators, library databases, videoconferences, e-mail, search engines, and, as a result, the selection of a required field of knowledge); to find necessary documents, send e-mails, to use library catalogues, reference information, to work with pedagogical journals, to upload research findings on the Internet; to provide higher education institutions with computer equipment; pedagogical software (MS Office), information services (World Wide Web) etc. Therefore, professional training of future lecturers of professional education (occupational safety and health) should be aimed at shaping information and communication competency. The use of innovative information and communication technologies in the education process is one of the ways to ensure the efficiency of such training.
The process of shaping information and communication competency is realized through the organization of the education process, education content and conditions, which contribute to shaping certain psychological qualities of the individual. This process is integrated into study in higher education institutions. The introduction of information and communication technologies into the system of education can positively influence the quality of education and intellectual development of students, preparation of students for professional activity and their ability to use information and communication technologies when researching and solving practical tasks.

The ways to shape information and communication competency of future lecturers of professional education (occupational safety and health) through the course on higher education pedagogy are described below.

The course on higher education pedagogy is of particular importance to professional pedagogical training of Master students since it is incorporated into the curriculum and includes mastering educational legacy taking into account Ukrainian pedagogical thought and higher education practice, expands pedagogical reasoning, assists in comprehending the theory of education, modern innovative pedagogical technologies, in particular information and communication technologies, and shapes creative skills to use the acquired knowledge.

As a result of mastering the course on higher education pedagogy, future lecturers of professional education (occupational safety and health) are expected to have the following general and professional competencies: scientific thinking; readiness to adhere to ethical principles of working in the man-man system, express empathy and respect for individual characteristics of other people; the ability to adapt under new, specific conditions and circumstances; awareness of the value of pedagogical knowledge; the ability to select the necessary sources of information and elaborate teaching materials; the ability to implement various types of business communications (general competencies); the ability to use professional terminology, understand the systemic and integral nature of various pedagogical phenomena and processes, complexity of practical
aspects of pedagogy, analyze the modern legal framework for education development, trends in educational policy in Ukraine and globally, apply modern information and communication technologies, analyze modern trends in pedagogy and educational technologies, comparatively analyze pedagogical issues in foreign and domestic contexts, generalize innovative pedagogical experience in one’s researches (professional competencies).

Thus, the course on higher education pedagogy implies mastering modern trends in the development of higher pedagogical education in the modern information space. In particular, it motivates future lecturers of professional education (occupational safety and health) to rationally use information and communication technologies while solving professional tasks in order to improve the mechanisms of higher education management.

The process of shaping information and communication competence of future lecturers of professional education (occupational safety and health) is realized within the framework of a diverse, integrated system of educational forms, among which the most important are lectures, seminars, laboratory work, practical classes, conferences, tutorials, individual classes, etc (Novak, 2019).

Within this research, the process of shaping information and communication competence of future lecturers of professional education (occupational safety and health) is also described through such educational forms as lectures and practical classes within the course on higher education pedagogy. In particular, a lecture on the use of modern educational technologies in higher education provides students with knowledge and skills in applying new information and communication technologies (network technologies, wiki technology, cloud technologies, distance learning technologies, technologies for creating and supporting personal web-resources) in professional activities. For one, after students familiarized themselves with network technologies, they described them as a relevant area of information technologies development. They aim not only to ensure the exchange of information between individual users of information and computer systems but also to create conditions to use the distributed information resources of
society cooperatively, obtain reference, documentary and other information from various specialized information funds.

The new information technologies play an important role in higher education, improve teaching and learning, automate monitoring and evaluation of future specialists, organize effective communication between teachers and students and exchange of experience, intensify and optimize management of the education process, etc. Therefore, information and communication competence of future lecturers of professional education (occupational safety and health) can be effectively shaped if lectures are supplemented with visual aids (PowerPoint presentations), software tools (electronic textbooks, encyclopedias, manuals, dictionaries, etc.), MS Office programmes and various Internet resources.

It must be noted that one of the main functions future lecturers of professional education (occupational safety and health) should perform in the context of information and communication competence is modeling (or designing), which consists in designing informational models of the education process and algorithms of pedagogical activity, etc. Therefore, the process of shaping information and communication competence of future lecturers of professional education (occupational safety and health) can be enhanced due to the incorporation of the project method or in practical classes, which was introduced in the 1920s. One of the authors of this method is the American educator D. Dewey and his successor W. Kilpatrick, who developed the «project-based learning» (Piekhota, Kiktenko, Liubarska, 2004). The value of this method consists in the fact that it contributes to developing initiative, autonomy, planning skills, takes into account learners’ interests and fosters a conscious attitude towards one’s activities (Karbobanets, Kurucs, Holub, Majoros, 2008). The project method suggests that didactic goals should be realized after particular issues have been solved and certain practical results have been achieved. Thus, the project method allows learners to develop their own cognitive interests, the ability to independently construct their knowledge, navigate information space.

Due to the project method, students can solve a number of multi-level didactic, educational and developmental tasks. It
contributes to developing cognitive skills and the ability to independently construct knowledge and navigate information space, etc. The project technology teaches students to independently acquire and apply certain knowledge in order to solve cognitive and practical tasks, helps them to develop communication skills, teamwork skills, research skills, systemic and creative thinking, public speaking skills while defending projects, etc.

The incorporation of the project method in the course on higher education pedagogy involves the following: students are offered to solve a particular problem by means of research; after that they predict the results of the project, which should be of practical, theoretical and cognitive value; the project itself is divided into individual intermediate stages followed by the determination of the results after each stage; students should be also involved in independent (individual, pair or group) work, which is aimed at implementing the project; the project should involve the use of research methods: problem statement, research objectives and research methods; presentation of results; analysis of the obtained data; formulation of conclusions (the use of brainstorming, round table discussions, creative reports, etc.).

The application of the project method in shaping information and communication competence of future lecturers of professional education (occupational safety and health) allows students to use information and communication technologies in the context of their methodological capabilities. For one, project topics of the course on higher education pedagogy are related to information culture and information competence of teachers. They may include information, research and creative projects with the use of search engines, software for working with texts, images, sound and video: for example, searching, processing or creating visual educational material to increase interest at the stage of presenting new material and actualize knowledge (electronic presentations on the topic, slideshows, audio- and video materials); searching, processing or creating reference resources to shape didactic material during the initial application of the acquired knowledge in practice, as well as during independent / creative activities (blogs, websites, electronic
directories, etc.); searching, updating or creating didactic material for preparation and assessment with the help of training programmes to practice skills and monitor the acquisition of established algorithms (didactic material on occupational safety and health in the TEST W2 programme, etc.).

According to a form of project implementation, one should pay particular attention to such pilot telecommunication projects as online surveys and testing. In addition, it is expedient to incorporate role-based projects (modelling and simulation games) into the course on higher education pedagogy. Project-based activities serve as the indicators of shaping information and communication competence of future lecturers of professional education (occupational safety and health) at the creative level.

Thus, applying the project method through the course on higher education pedagogy proves that the project technology encourages future lecturers of professional education (occupational safety and health) to master information and communication technologies and acquire information and communication competence.

Therefore, information society requires that future specialists should be able to obtain, store, process and transmit information, use information and communication technologies rationally to realize and develop their potential and make important decisions based on acquired knowledge. Therefore, the process of shaping information and communication competency of future lecturers of professional education (occupational safety and health) should be one of the priorities of modern education.

Conclusions

The incorporation of competency-based approach in the education process is now conditioned by social and economic factors and the modernization of higher education in order to fully integrate it into European Higher Education Area, as well as the increasing requirements of society for professional competency of graduates and the need of every graduate to be mobile, competent and competitive in the global labour market.

Thus, information and communication competence is a personal quality, which requires future specialists to have relevant knowledge, skills and abilities to navigate in information space.
in order to obtain and apply information sources and information and communication technologies in future professional activities.

The process of forming information and communication competence of future lecturers of professional education (occupational safety and health) should be understood as an important professional ability to freely navigate in information space in order to obtain (search, select and analyze) information sources and effectively apply information and communication technologies in professional activity.

Effective methods of shaping information and communication competence of future lecturers of professional education (occupational safety and health) through the course on higher education pedagogy include the project method, which combines theoretical knowledge and their practical application when solving professional problems.

Further research should be aimed at generalizing foreign experience in improving professional training of future lecturers of professional education (occupational safety and health) with the aim to enhance their information culture.

Література
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Новак О.М.
Формування інформаційно-комунікаційної компетенції майбутніх викладачів професійної освіти (охорона праці) у процесі вивчення дисципліни «педагогіка вищої школи»

Анотація
У статті розглянуто теоретичні підходи до проблеми формування інформаційно-комунікаційної компетенції майбутніх викладачів професійної освіти (охорона праці) у процесі професійної підготовки у закладі вищої освіти, зокрема під час вивчення дисципліни «Педагогіка вищої школи». Визначено, що підготовка майбутніх викладачів професійної освіти (охорона праці) до роботи в сучасному
інформаційному просторі має бути спрямована на формування інформаційно-комунікаційної компетентності засобами інформаційно-комунікативних технологій. У статті виявлено шляхів формування інформаційно-комунікаційної компетенції майбутніх викладачів професійної освіти (охорона праці) у процесі професійної підготовки під час вивчення дисципліни «Педагогіка вищої школи» студентами освітнього рівня «магістр» зі спеціальності 015 Професійна освіта (Охорона праці) ДВНЗ «Переяслав-Хмельницький державний педагогічний університет імені Григорія Сковороди». Доведено, що ефективним методом формування інформаційно-комунікаційної компетенції майбутніх викладачів професійної освіти (охорона праці) під час вивчення дисципліни «Педагогіка вищої школи» є метод проектів, який поєднуючи в собі теоретичні знання та їхнє практичне застосування сприяє розвитку пізнавальних навичок, формуванню вміння самостійно конструювати свої знання, орієнтуватися в інформаційному просторі тощо.

**Ключові слова:** вища школа, компетентнісний підхід, інформатизація освіти, інформаційно-комунікаційна компетентність, дисципліна «Педагогіка вищої школи», майбутні викладачі професійної освіти (охорона праці), інформаційно-комунікаційні технології, метод проектів, освітній процес.

**Новак О.М.**

**Формирование информационно-коммуникационной компетенции будущих преподавателей профессионального образования (охрана труда) в процессе изучения дисциплины «Педагогика высшей школы»**

**Аннотация**

В статье рассмотрены теоретические подходы к проблеме формирования информационно-коммуникационной компетенции будущих преподавателей профессионального образования (охрана труда) в процессе
формування інформаційно-комунікаційної компетенції майбутніх викладачів професійної освіти (охорона праці) у процесі вивчення дисципліни «Педагогіка вищої школи»

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