THE PLACE OF AXIOLOGICAL AND DEONTOLOGICAL COMPETENCES IN THE STRUCTURE OF PROFESSIONAL TRAINING OF IT SPECIALISTS

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The article analyses the main elements of the phenomenon of axiological and deontological competences of a modern IT specialist. One of the fundamental elements of axiological and deontological competence is substantiated, namely knowledge, which plays a fundamental role of the deontological aspect in the professional training of future IT specialists. It is emphasized that the cognitive components of the studied competence also include skills and abilities. The author analyses the Ukrainian and foreign practice of relevant research, identifies a variety of interpretations of the selected components of the axiological and deontological competencies of a modern IT specialist.

Thus, the purpose of the article is to provide a reasoned allocation of the place of axiological and deontological competencies in the structure of professional training of a modern IT specialist, which, in turn, should be integrated into the educational process for specific desired learning outcomes of an IT specialist. In particular, the importance of life skills, which are focused on personal development, and flexible professional skills is substantiated for the further quality educational process of training IT specialists. The integration of such elements of axiological and deontological competence will help in the development of appropriate training programmes, the use of various teaching methods, and the stimulation of personal development. The integration of skills based on axiological and deontological knowledge and skills is an area for further research.

Life skills and flexible professional skills play an important role in the training of IT professionals and the educational process. Here are a few reasons for their importance: personal development, communication and networking, adaptation to change, creativity and innovation. Thus, the article indicates the prospects of integrating the studied components of the phenomenon of formation of value and deontological competence in the process of professional training of future IT specialists.

***Keywords:** axiological and deontological competences, knowledge, skills, life skills, soft skills.*

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МІСЦЕ АКСІОЛОГІЧНОЇ ТА ДЕОНТОЛОГІЧНОЇ КОМПЕТЕНТНОСТЕЙ У СТРУКТУРІ ПРОФЕСІЙНОЇ ПІДГОТОВКИ ФАХІВЦІВ З ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ

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У статті проаналізовано основні елементи феномену аксіологічної та деонтологічної компетентностей сучасного IT-фахівця. Обґрунтовано один із фундаментальних елементів аксіологічно-деонтологічної компетентності – знання, який відіграє основоположну роль деонтологічного аспекту у професійній підготовці майбутніх IT-фахівців. Підкреслено, що до когнітивних складових досліджуваної компетентності належать також уміння та навички. Проаналізовано українську та зарубіжну практику відповідних досліджень, виявлено різноманітність трактувань виокремлених складових аксіологічної та деонтологічної компетентностей сучасного IT-фахівця.

Таким чином, метою статті є аргументоване виділення місця аксіологічної та деонтологічної компетентностей у структурі професійної підготовки сучасного IT-фахівця, які, в свою чергу, мають бути інтегровані в освітній процес для досягнення конкретних бажаних результатів навчання IT-фахівця. Зокрема, обґрунтовано важливість для подальшого якісного освітнього процесу підготовки IT-фахівців таких навичок, як життєві навички, орієнтовані на особистісний розвиток, та гнучкі професійні навички. Інтеграція таких елементів аксіологічної та деонтологічної компетентності сприятиме розробці відповідних навчальних програм, використанню різноманітних методів навчання, стимулюванню особистісного розвитку. Інтеграція навичок, що ґрунтуються на аксіологічних та деонтологічних знаннях і вміннях, є сферою для подальших досліджень.

Життєві навички та гнучкі професійні навички відіграють важливу роль у підготовці IT-фахівців та освітньому процесі. Ось декілька причин їх важливості: особистісний розвиток, комунікація та нетворкінг, адаптація до змін, творчість та інновації. Таким чином, стаття вказує на перспективність інтеграції досліджуваних компонентів феномену формування ціннісно-деонтологічної компетентності у процесі професійної підготовки майбутніх IT-фахівців.

Ключові слова: *аксіологічні та деонтологічні компетентності, знання, вміння, навички, життєві навички, м'які навички.*

Introduction of the issue. The educational process of forming competences is complex and multifaceted, so before starting its modelling it is necessary to thoroughly investigate several issues that can help in this regard. Previous studies have formulated and analyzed the goal of forming the value and deontological competence of a future IT specialist. This competence is important for the formation of responsibility for their actions, development of high moral values and understanding of the importance of ethical aspects in professional activities.

For a systematic and in-depth understanding of the phenomenon of competence, it is necessary to determine the individual elements of the competence structure described above. In the cognitive components, knowledge, skills and abilities should be mentioned.

Current state of the issue. For our research, we conducted the analysis of scientific studies that interpret the following key elements: the value component of competence, the deontological component of competence and the professional training of specialists (IT field in particular).

The value component in the structure of professional training of a future specialist has been studied in the works of the following scholars: I.D. Bekh, I.A. Zyazyun, Y.V. Pelekh.

The deontological context of the problem was studied by V.Y. Artemov, A.V. Matviichuk [8] and others.

The problems of professional training of specialists are addressed in the works of V. Bykov, R. Horbatiuk, M. Zhaldak, N. Morse, S. Medynskyi. In particular, the issue of professional training of IT specialists can be traced in the scientific studies of such researchers as

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R. Horbatiuk, H. Kozlakova, I. Medzebrovskyi, T. Morozova, S. Popershniak, Z. Seidametova, S. Semerikova, etc.

Aim of research. The purpose of the article is to substantiate and determine the place of axiological and deontological competences in the structure of professional training of a modern IT specialist, which, in turn, should be integrated into the educational process for specific desired learning outcomes of an IT specialist.

Results and discussion. Knowledge is fundamental to human and social existence, individual and social practice, and the formation of life strategies. It is reasonable to assert that today knowledge should be considered in a global context, because "it cannot be tied to one country, but is consumed by society as a whole through information technology and other means" [7: 102]. Thus, we will argue for the study of skills and abilities that belong to the cognitive components of competence.

As for the definition of the content of the concept of "knowledge", no unambiguous interpretation has yet been established. This is well illustrated by the definitions given by modern dictionaries. In particular, the Cambridge Dictionary defines "knowledge" as "understanding or information about a subject gained through experience or research, known to one person or people in general" [8]. The Oxford Dictionary states that "knowledge is information, understanding and skills gained through education or experience (e.g. practical/medical/scientific knowledge)" [9]. The Webster's Dictionary defines "knowledge" as (1) the fact or condition of knowing something that has become known through experience or the work of the imagination, and (2) the fact or condition of being aware of something. At the same time, knowledge covers what is (1) known (a set of truths, information and ideas acquired by mankind) or what is (2) developed by science, art and technology [6: 11].

These definitions, despite having substantive differences, show some particular similarities, which gives grounds to assert that knowledge is associated with practical and intellectual activity and can exist in different cultural contexts and forms (for example, scientific knowledge in theoretical and artistic knowledge in conceptual form). This thesis substantially resonates with the position of Ukrainian researcher Vladyslav Shevchuk, who interprets knowledge "as the result of human cognitive activity, as the final reflection of a certain aspect of real reality in the human mind in the form of hypotheses, ideas, concepts" [12: 134]. At the same time, the researcher applies an instrumental approach to knowledge, pointing out that the formed knowledge is the basis for acquiring new one and forming new judgements – so-called knowledge spiral.

Thus, based on the functional approach, Ukrainian philosopher Andriy Matviychuk interprets knowledge as a product of human cognitive activity, which "arises, functions and is improved in the process of active human practice" [5: 11]. To understand the phenomenon of knowledge, the researcher's remark that "in knowledge, there is a transfer of information into a theoretically systematic form, retention of what can be stored and transmitted as a basis for subsequent human activity" is important [5: 12]. Based on this position, knowledge can be interpreted as a fundamental element of competence, which is both a means of mastering the world around us and a way of relaying and objectifying the experience gained, in particular, in the form of scientific theories, artistic concepts, and technical projects.

The position of the Swedish scientist Boo Geranzon (specialist in the field of methodological problems of computerization) is also worth mentioning, for he proposed the idea of three categories of knowledge: 1) propositional (from the Latin propositio – sentence, statement) or theoretical knowledge; 2) practical

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knowledge (skills); 3) introductory knowledge. The researcher described the relationship between the three proposed categories of knowledge as follows: we interpret theories, methods and prescriptions by reading them, and we acquire practical knowledge by participating in activities. "If we eliminate all practical knowledge and all familiarization from activity, we will also be left without propositional knowledge" [5]. In other words, competence is the practical activation of several types of knowledge in a particular situation and life (including professional) context. At the same time, the structure of knowledge as an element of competence should include theoretical, practical and introductory knowledge, which together confirm the fact (and are the conditions) of understanding and awareness of something (a certain subject, phenomenon or process, for example, values or culture of duty). In addition, a kind of transfer of theoretical knowledge into practical knowledge – skills and abilities – is one of the fundamental tasks in the process of forming competence(s).

As a concludison, we should mention that understanding of the knowledge is required for axiological and deontological competences, and involves recognizing the importance of ethical values and professional responsibilities in the training of modern IT specialists. By integrating these competences into the curriculum and fostering a culture of ethical awareness, IT professionals can contribute to the responsible and ethical use of technology.

As noted above, the cognitive components of competence include skills and abilities, which are diverse in terms of the activity (in general) and life activity, thus are now considered to be important prerequisites for professional and life success in general [13].

A fundamental understanding of the phenomena of skills and abilities is the realisation that they are based on knowledge, which is usually divided into procedural and declarative knowledge. Procedural knowledge is the understanding and ability to perform tasks in a certain area, while declarative knowledge, which is the possession and understanding of the relevant basic facts and concepts of this area, is crucial for the development of procedural knowledge. Taken together, declarative and procedural knowledge contribute to the formation of an understanding of the relationships between facts and concepts within a particular subject area and actions based on them [1; 11]. For example, axiological knowledge will facilitate value-oriented actions, and deontological knowledge will facilitate the practical implementation of a sense of duty.

It should be noted that skills are generally considered as an integral part of abilities. At the same time, a skill is formed as a stable combination of a conscious goal of certain actions with the involvement of skills necessary to achieve this goal. In addition, skills are typically interpreted as the initial stage of mastering certain forms of activity (intellectual or physical). Instead, skills appear as a level of understanding, interpretation and creativity in the implementation of intellectual and practical tasks [3: 24-25]. In view of this approach, the concept of "skill" is interpreted as a person's readiness to successfully perform a certain activity based on knowledge and skills. Extrapolating the relevant provisions to the context of our study, we emphasize that we consider it necessary to integrate skills based on axiological and deontological knowledge and skills into the structure of the axiological and deontological competences of a future IT specialist, which will be the basis for the successful activity (including professional) of an IT specialist.

Regarding the phenomenon of skills, we should note them as a useful and measurable part of competence. In addition, they are transferable, which is an important feature, as they are relevant in many social contexts and professional situations [4: 6]. Also relevant for our study is the fact that skills can be different in content and

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orientation. The French researcher Dominique Gamer has substantiated the position that today skills (in the English-language tradition –– skills) can actually be divided into three types: 1) life skills, which are focused on personal development; 2) professional skills, which are directly related to the profession or a particular professional field; 3) flexible professional skills, which are soft skills, skills related to the organization of working conditions, communication with colleagues, ensuring a certain degree of autonomy and participation in the team [10]. It is worth noting that American researchers Maureen Short and Yolanda Keller-Bell consider the following important flexible professional skills to be important: (1) the ability to think clearly about complex problems, (2) to apply creative and innovative solutions to solve current problems, (3) to operate with new knowledge and skills in new conditions [13].

Flexible professional skills deserve special attention, because in fact, today in Ukraine they are considered one of the important learning outcomes and occupy a special place in the national standards of higher education. In addition, Ukrainian researchers in their theoretical works and documents on the administration of the educational process mainly use the term "soft skills". The latter is defined as "a set of non-specialized, supra-professional skills that are responsible for successful participation in the work process, high productivity and, unlike specialized skills, are not related to a specific field" [2: 4]. It is emphasized that when speaking about soft skills, we mean social discourse, so we are talking about the skills of persuasion, finding an approach to people, being a leader, communicating, working in a team, moving towards self-development, and looking at the world creatively. Meanwhile, there is reason to believe that the interpretation of soft skills established in Ukrainian practice actually covers both life skills and flexible professional skills.

It is worth noting that the concept of "life skills" is becoming increasingly common in European practice. This is particularly evidenced by the project supported by European Commission – The Life Skills for Europe. In the final document, the experts of this project interpret the concept of "life skills" as a combination of different abilities that generally allow a person to solve their own problems in order to live an independent personal life and participate in the collective life of society [4: 4]. It is noteworthy that this approach to life skills, according to European experts, indicates that competences should include both knowledge and values, because they ultimately determine people's needs and actions to meet them. In addition, in the context of finding ways to improve the quality of education, education experts from the United Nations Children's Fund (UNICEF) also refer to the concept of life skills, defining it as follows: "psychosocial and interpersonal skills used in everyday interactions... not specifically for getting a job or earning an income" [5: 12]. Teaching such life skills focuses on changing attitudes to the world around us, values, and behavior patterns in a socially positive way. On the other hand, skills as a subject of study are influenced by the dominant education system or political system, with their priorities, goals and values [4: 6]. In other words, the content and nature of future skills and related abilities, and the competences of which they are an element, can be designed in the educational process to meet specific desired learning outcomes. This thesis will be taken into account in the further consideration of the problems of practical formation of axiological and deontological competences of future IT specialists.

Life skills and soft skills play an important role in the training of IT professionals and the educational process. Here are some reasons why they are important.

Personal development: Life skills contribute to the personal development

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of students by helping them to develop self-management, planning, time management and goal achievement skills. These skills help students to use their potential effectively, be independent and succeed in any area of life.

Communication and networking: Flexible professional skills such as effective communication, collaboration, leadership and teamwork are an integral part of working in the IT field. The ability to interact with colleagues, clients, and other stakeholders helps to create a productive work environment, solve problems, and achieve common goals.

Adaptation to changes: The modern IT industry is changing rapidly, so flexible professional skills are becoming key to a successful career in this field. The ability to quickly adapt to new technologies, learn and change your approach to work are essential to achieving success in the IT industry.

Creativity and innovation: Flexible professional skills contribute to the development of creativity and innovation in students.

This justification of importance argues for the prospect of further research into the integration of axiological and deontological competence in the quality training of IT professionals.

Conclusions and research perspectives. The analysis of individual elements of competence has provided grounds for formulating a number of important provisions for further research:

1) competence is the practical activation of several types of knowledge in a particular situation and life (including professional) context; at the same time, knowledge can be interpreted as a fundamental element of competence, which is both a means of mastering the world around us and a way of relaying the experience gained and its objectification, in particular, in the form of scientific theories, artistic concepts, technical projects;

2) in the structure of axiological and deontological competences of a future IT specialist, we consider it necessary to integrate skills and abilities based on axiological and deontological knowledge and skills, which are the basis for successful activity (including professional) of an IT specialist; the content and nature of future skills and related abilities can be constructed in the educational process for specific desired learning outcomes;

3) by setting a certain subject and functional load of values as elements of axiological and deontological competences, we can ensure the social orientation of these competences in combination with the formation of positive individual value orientations of the professional activity of an IT specialist;

4) personality traits as an important element of competences and the phenomenon of personality itself have a socio-historical nature, they are inherently dynamic and changeable; analysis (including measurement) of the manifestations of personality qualities in everyday (or professional) behavior provides an opportunity to understand the characteristics and potential of the individual, including in the future professional field.

These theoretical and methodological provisions are of fundamental importance for (1) designing and constructing axiological and deontological competences, followed by (2) solving the practical task of modelling the educational process of forming relevant competences in future IT professionals.

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