

STRUCTURE AND CONTENT OF INFORMATION COMPETENCE OF FOREIGN STUDENTS OF MEDICAL SPECIALTIES

СТРУКТУРА ТА ЗМІСТ ІНФОРМАЦІЙНОЇ КОМПЕТЕНТНОСТІ ІНОЗЕМНИХ СТУДЕНТІВ МЕДИЧНИХ СПЕЦІАЛЬНОСТЕЙ

The article is devoted to the problem of information competence formation of international medical students in the educational environment of universities. The basic structural components and skills that constitute the information competence of international medical students are presented and clarified. There are: motivational and targetive component, cognitive and activity-oriented component, personality and value-oriented component. A motivational and targetive component is associated with the formation of students' interest and need to work with information, motives for mastering information competence. It is noted that the personalized goals of students should be fully consistent with the main learning objectives of applicants for higher medical education, defined in the Standard of Higher Education of the second (master's) level, field of knowledge (22 Health care), specialty (222 Medicine). Cognitive and activity-oriented component of the information competence of students certifies the formation of their knowledge and skills necessary for working with information. It is concluded that this component includes the following groups of skills: information-oriented and analytical skills, constructive and projective, organizational and communicative, reflexive and evaluative, special skills. A personality and value-oriented component of the information competence of foreign students of medical specialties certifies the identity of future specialists of personal qualities and values necessary for working with information. It was concluded that the composition of the information competence of foreign students of medical specialties includes the following professional and personal qualities: humanity, social responsibility, honesty, independence, attentiveness, observation, creativity, balance, tolerance, activity, purposefulness, determination, prudence.

Key words: *information competence, international medical students, structural components, skills, motivational and targetive component, cognitive and activity-oriented component, personality and value-oriented component.*

Стаття присвячена проблемі формування інформаційної компетентності іноземних студентів-медиків в освітньому середовищі ВНЗ. Представлено та уточнено основні структурні компоненти та вміння, що становлять інформаційну компетентність іноземних студентів-медиків. Виділяють: мотиваційно-цільовий компонент, когнітивно-діяльнісний компонент, особистісно-ціннісний компонент. Мотиваційно-цільовий компонент пов'язаний із формуванням в учнів інтересу та потреби працювати з інформацією, мотивів оволодіння інформаційною компетентністю. Зазначається, що персоналізовані цілі студентів мають повністю відповідати основним цілям навчання здобувачів вищої медичної освіти, визначеним у Стандарті вищої освіти другого (магістерського) рівня, галузі знань (22 Охорона здоров'я), спеціальності (222 Медицина). Когнітивно-діяльнісний компонент інформаційної компетентності учнів засвідчує сформованість у них знань і вмінь, необхідних для роботи з інформацією. Зроблено висновок, що цей компонент включає такі групи умінь: інформаційно-аналітичні, конструктивно-проективні, організаційно-комунікативні, рефлексивно-оцінні, спеціальні. Особистісно-ціннісна складова інформаційної компетентності іноземних студентів медичних спеціальностей засвідчує наявність у майбутніх спеціалістів особистісних якостей і цінностей, необхідних для роботи з інформацією. Зроблено висновок, що до складу інформаційної компетентності іноземних студентів медичних спеціальностей входять такі професійно-особистісні якості: людяність, соціальна відповідальність, чесність, самостійність, уважність, спостережливість, креативність, врівноваженість, толерантність, активність, цілеспрямованість, рішучість, розсудливість.

Ключові слова: *інформаційна компетентність, міжнародні студенти-медики, структурні компоненти, вміння, мотиваційно-цільовий компонент, когнітивно-діяльнісний компонент, особистісно-ціннісний компонент.*

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Problem under research. Training foreign students of higher education in medical specialties is one of the key strategic directions of the development of higher education in Ukraine, which is due, firstly, to the economic component, and, secondly, to the expansion of international relations and recognition of the prestige and demand of Ukrainian education in the global space.

The study of the process and results of the training foreign students of higher education in

medical specialties revealed the contradiction between the growing requirements for medical professionals training and the relatively low success rate of foreign students.

Training of foreign students of medical specialties has certain features that determine the specificity of the content of the components of the didactic system. It includes the following units: predictive and targetive, conceptual and methodological, theoretical and content-oriented,

activity-oriented and procedural, resultative and evaluative.

Analysis of the latest research and publications. Researchers T. Zakusilova, O. Kovtun, O. Isaeva, N. Khodotova, O. Solodovnik, Y. Ilyasova, L. Nazarenko and I. Melnychuk studied the main factors and skills mandatory for a medical worker's professional development. K. Kurenkova, G. Stechak, V. Svyrydyuk paid much attention to the development of personal qualities and values of future physicians.

The purpose of the paper is to clarify the content of the structural components of the information competence of international students of medical specialties and basic skills that constitute them.

Presentation of the main material of the study. To clarify the content of the structural components of the information competence of foreign students of medical specialties, the content of regulatory documents was analyzed (Law of Ukraine "On Higher Education" [1], Strategy for the Development of Medical Education [2], Standard of Higher Education of the second (master's) level, branch of knowledge 22 Health care, specialty 222 Medicine [3], etc. as well as the theoretical positions of specialists in the field of medical education.

The first component of the information competence is a *motivational and targetive component*. It is associated with the formation of students' interest and need to work with information, motives for mastering information competence.

So, T. Zakusilova emphasizes that motivation is a basic and central element that directs a person to achieve a goal and contributes to the development of personality. In light of this, future medical professionals should be aware of and understand the choice of future professional activity, have formed internal motives for achieving success in the chosen professional field, etc. [4, p. 53].

O. Kovtun notes that in medical education institutions it is important to ensure the formation of internal motivation in future doctors regarding their professional and personal becoming, development of students' sustainable interest in the chosen specialty based on social motives [5, p. 89, 90]. A similar opinion is expressed by Y. Ostraus, who emphasizes that considerable attention in the process of teaching students in a medical education institution should be paid to the development of their motives for mastering professionally significant knowledge and skills, as well as relevant professional and personal qualities [6, p. 134]. According to the conclusions of O. Isaeva, future doctors should develop the need for the assimilation of the necessary professional knowledge and skills and the desire to help other people, primarily to their patients [7, p. 140].

Of particular interest in the context of the initiated research were the scientific views of V. Svyrydyuk,

according to which, during the formation of information and communicative competence of medical students, it is necessary to ensure their awareness that this competence is an important component of the integral professional competence of medical workers, to form in them the desire to master this competence as within the framework of the development of their professional and educational motivation, as well as motivation for future professional activity. The scientist also emphasizes that in future doctors it is important to develop motivation for the active use of modern innovative, information technologies, the need for the manifestation of cognitive independence, the desire to actively engage in scientific activities in the field of their professional activities based on the use of these technologies [6, p. 114–116].

So, on the basis of the foregoing, it can be summed up that the motivational and targetive component of the information competence of foreign students of medical specialties provides for:

- their interest and need to work with various types of educational and professionally oriented information;
- awareness of the essential role of information competence in educational and professional activities, the development of motives for mastering information competence and its continuous improvement;
- formation of motivation among applicants for higher medical education to set a sequence of goals on the way to mastering information competence, the manifestation of the ability to formulate and achieve these goals.

It should be clarified that the personalized goals of students should be fully consistent with the main learning objectives of applicants for higher medical education, defined in the Standard of Higher Education of the second (master's) level, field of knowledge (22 Health care), specialty (222 Medicine), namely as follows:

- acquisition of the ability to solve complex problems and problems, including research and innovation, in the field of medicine;
- ensuring the ability to continue learning with a high degree of autonomy [3, p. 7].

The *cognitive and activity-oriented component* of the information competence of students certifies the formation of their knowledge and skills necessary for working with information (information-analytical, constructive and projective, organizational and communicative, reflexive and evaluative).

Thus, in the Standard of Higher Education of the second (master's) level, the field of knowledge (22 Health care), specialty (222 Medicine) it is noted that the objects of training medicine and medical activity are prevention, diagnosis and treatment of human diseases, the impact of health problems on patients, their families and population, maintaining health, principles and theories of prevention,

diagnosis and treatment of human diseases at the individual and population levels [3, p. 7].

In accordance with the normative content of the training of applicants for higher education, formulated in terms of the results of students in the specified standard, students must have a thorough knowledge of the structure of professional activity, understand and assimilate knowledge of fundamental and clinical biomedical sciences at a level sufficient to solve professional problems, as well as master specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for conducting research [3, p. 11].

According to V. Svyrydyuk, in the totality of knowledge included in the structure of information and communicative competence of future doctors, the following places are occupied by the following:

- form the basis for research methodology;
- knowledge of the basic methods of searching for modern information sources on selected research problems;
- knowledge of the essence of the concept of “relevance of sources of scientific information”, knowledge of the essence of the concept of “pertinence of information sources” [6, c. 151].

V. Svyrydyuk considers that students of medical specialties should know:

- the essence and basis of information and communicative competence of a physician;
- conceptual apparatus of this competence;
- medical terminology, as well as the basic concepts necessary for research activities, including: “scientometrics”, “Hirsch index”, “impact factor”, “international scientometric database”, “cloud technologies” etc.;
- basic approaches to the organization of scientific research in medicine based on the use of the above technologies;
- rules for the use of international scientometric bases, containing databases of open and closed access, as well as their cloud services in science and education;
- the content and specifics of the application of the method of computer modeling in medical science and education;
- features of various typical information and communicative situations that often arise during the presentation of intellectual property objects at scientific forums, and requirements for scientific publications for their placement in scientometric databases [6, p. 65–58].

M. Bichko emphasizes that future doctors should master not only professional knowledge, but also knowledge from other academic disciplines (physics, biology, anatomy, psychology, etc.), which are professionally necessary for these specialists. in particular, about modern medical equipment used for diagnostics (stadiometer, scales, stetho-

phonendoscope, tonometer, thermometer, etc.), therapy (a set of medical devices and medicines for emergency medical care), clinical laboratory tests (spirometer, glucometer, microscope, etc.), etc. [7, c. 8].

Native scientists (I. Levenok, I. Melnychuk, O. Yatsyshyna, etc.) also draw attention to the fact that foreign students must master medical terminology in at least two languages (Ukrainian and English), because without this they will not be able to become qualified physicians [8; 9]. It is also worth noting that, according to N. Avramenko, future foreign doctors, in order to master professional terminology, must learn the system of knowledge about: the norms of the modern Ukrainian (or English) language (morphological, orthoepic, syntactic, lexical, stylistic, etc.), speech means (intralingual and extralingual), communicative strategies and tactics of professional behavior of the physician; scope and semantic features of professional terminology (primarily medical terms – composites and abbreviations); basic terminology elements and methods of constructing clinical terms; norms of planning and implementation of professional speech and cross-cultural communication, implementation of therapeutic and recommendatory strategies of medical discourse [10, p. 96, 96].

Regulatory documents and scientific literature also emphasize the need to ensure professionally necessary skills in the process of professional training of future doctors of different groups. In particular, during the development of the didactic system for the formation of information competence, the list of mandatory skills given in the Standard of Higher Education of the second (master's) level, the field of knowledge (22 Health care), specialty (222 Medicine) was analyzed.

1. Ability to abstract thinking, analysis and synthesis.
2. Ability to learn and master modern knowledge.
3. Ability to apply knowledge in practical situations.
4. Ability and understanding of the subject area and understanding of professional activities.
5. Ability to adapt and act in a new situation.
6. Ability to make informed decisions.
7. Ability to work in a team.
8. Ability to interpersonal interaction.
9. Ability to communicate in a foreign language.
10. Ability to use information and communication technologies.
11. Ability to search, process and analyze information from various sources.
12. Certainty and perseverance regarding the tasks and responsibilities taken.
13. Awareness of different opportunities and gender issues.
14. Ability to realize their rights and obligations as a member of society, to realize the values of civil (free

democratic) society and the need for its sustainable development, the rule of law, human and citizen freedoms in Ukraine.

15. Ability to preserve and increase moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, to use various types and forms of physical activity for active recreation and healthy lifestyle [3, p. 8–9].

Obviously, all these abilities of future doctors are largely related to the information competence of a specialist. It should also be noted that many specialists in the field of medical education reveal their own position on what skills future doctors should first of all master.

According to O. Kovtun, students need to form the following important skills: the ability to convincingly explain the need for the necessary medical manipulations, to establish clear feedback with their colleagues to ensure coherence in joint activities with them; ensure effective communication with representatives of various target auditors; to regulate and prevent the occurrence of conflict situations; manage your emotions and statements [11, p. 91, 92].

According to the conclusions of T. Zakusilova, future doctors should master the following skills:

- make independent balanced decisions in extreme situations, carry out all professional types of medical intervention and their correction;
- competently apply innovative types, methods and technologies of treatment;
- monitor the patient's health and course of the disease;
- master the technique of carrying out medical procedures and manipulations in their professional field [12, p. 73].

Based on the foregoing, our own scientific position on the content of the *cognitive and activity-oriented* component of the information competence of foreign students of medical profile was formulated. This component includes:

- awareness of the meaning of information, ways of its search in modern sources, its processing (analysis, systematization, verification of reliability, relevance and pertinence) and broadcasting to other participants of communication;
- awareness of the essence, structure, content of information competence of a physician and its role in his professional and everyday life, ways to improve this competence;
- awareness of medical terminology in English (Ukrainian) and native languages and methods for determining the meaning of each concept using modern sources of information;

- awareness of the basic requirements for a modern physician, his professional duties using modern information and computer technologies;

- awareness of the norms of communication with other people, in particular representatives of different cultures, different segments of the population, patients and their relatives etc. online and off-line;

- awareness of the requirements for research activities, ways to search for modern sources of information on the chosen problem and the algorithm for working with these sources, presenting your own intellectual product to the general public.

In the process of research, it was also concluded that this component includes the following groups of skills:

- information-oriented and analytical skills – provide information (search, selection, collection and dissemination of information) and analytical (analysis, systematization, generalization, clarity, transformation of information, formulation based on this conclusion, proposals and forecasts) level of educational, research or professional activity of a specialist;

- constructive projective skills – imply the ability of future doctors to formulate, specify the individual goal of their own educational or professional activities in accordance with their own plan and the existing specific situation, develop a plan to achieve this goal (determine the ways and stages of its achievement of this goal, in light of this design the content of their future activities and the sequence of actions on the use of modern information sources, select methods, forms, means of implementing this goal-oriented activities, to predict possible difficulties in work and deviations from the plan and options for making appropriate adjustments to the activity, etc.);

- organizational and communicative skills – manifested in the ability of a physician to carry out effective direct or indirect communication with other people based on the use of modern information technologies, the ability of a physician to clearly and correctly express his thoughts, taking into account the individual characteristics of the recipient of the message (age, gender, national, speech, age, psychological, etc.) and to establish effective feedback with him, mobilize people to perform set tasks, rationally distribute work between the participants of joint interaction;

- reflexive and evaluative skills – necessary for foreign students to carry out introspection of the level of formation of knowledge, skills, qualities necessary for working with information, and determining ways to further improve them, identifying positive and negative aspects in the process of forming their own information competence and self-control of their educational and professional activities, if necessary, making timely adjustments to its course; personal self-improvement on the basis of taking into account

the results of self-study and introspection of their own knowledge, skills, qualities and properties;

- special skills – reflect the specifics of the professional activity of physicians and the need of medical students to perform educational, professional and research activities, taking into account this specificity. This group of skills includes the following: correctly apply medical terminology in different languages (Ukrainian or English, native); be able to diagnose the state of health of patients, identify their diseases and prescribe optimal treatment using modern information technologies and innovative medical equipment; be able to convince patients and their relatives of the need to perform prescribed medical procedures and use prescribed medications; competently organize interaction with their colleagues on the basis of compliance with the rules of medical ethics, timely update their knowledge and skills, improve their professional skills based on the development of the latest information and professional sources; carry out research activities in the field of medicine, present research products to their colleagues in author's scientific publications and reports of scientific and practical conferences and seminars of various levels; skills of life-long education etc.

As it was defined earlier, *the personality and value-oriented component* of the information competence of foreign students of medical specialties certifies the identity of future specialists of personal qualities and values necessary for working with information.

Thus, Y. Ilyasova emphasizes the need to form in future doctors such personal and professionally significant qualities as: humanity, mercy, empathy, patience, kindness, ability to reflect and adequate self-esteem [13, p. 84]. L. Nazarenko, I. Melnychuk believe that a medical worker should master the following personal qualities: observation, responsibility, empathy, balance, benevolence, tolerance, empathy, etc. [14, p. 42].

According to G. Stechak, professionally important qualities for a physician are the following: moral responsibility, civic maturity, social activity, a tendency to the profession, humanity, high demands on oneself and others, sociability, education, competitiveness, independence in making important decisions, responsibility for the results of their own activities, patience, purposefulness, determination, prudence, observation, love of mankind [15, p. 67]. V. Svyrydyuk to professionally important qualities as a component of information and communicative competence of a physician include the following: creativeness, activity, purposefulness, tolerance, observation, assertiveness, etc. [4, p. 151].

It is also worth noting that many specialists in the field of medical education emphasize the importance of forming humanistic professional and personal values in future doctors. According to L. Nazarenko

and I. Melnychuk, these values are an important aspect of the competence of a physician, because they determine the value characteristics of the student to the patient and his family, to collaborators, to various professional and everyday situations, as well as the choice of a specific model of specialist behavior when solving complex professional problems [14, p. 42].

As it turned out, scientists express different opinions on the definition of the system of professional and personal values of a physician. So, K. Kurenkova among these values identified the following:

1. Basic professional values that ensure the general orientation of the personality of the specialist. This group is formed by values of a worldview nature that ensure the social orientation of the individual physician (person, health, life, good, etc.).

2. Social and regulatory values that determine the nature of the relationship of the medical worker with patients and their families. This group combines the values that regulate the relationship of the physician with patients and their relatives (kindness, social maturity, mercy, altruism, humanity, empathy).

3. Collegial and regulatory values governing the relationship of a physician with his colleagues. and their own people with co-workers. The group includes the values governing relations with colleagues (collegiality, goodwill, professional reputation, exactingness).

4. Personal-reflexive values that determine the attitude of the individual to himself as a representative of the medical profession. The author names the following values: love for the medical profession, professional dignity, self-criticism, conscientiousness, etc. [17, p. 7, 8].

The scientific position of K. Kurenkova is shared by Y. Ostraus. In her scientific work, she identified similar groups of professional and personal values [18, p. 71].

Based on the foregoing and the results of their own teaching activities, it was concluded that the composition of the information competence of foreign students of medical specialties includes the following professional and personal qualities: humanity, social responsibility, honesty, independence, attentiveness, observation, creativity, balance, tolerance, activity, purposefulness, determination, prudence. It was also found out that in the process of studying at the university, foreign students of medical specialties should internalize, first of all, universal human values that acquire special importance for a physician, in particular the following: person, life, health, information, etc. Mastering these values becomes the basis for the formation of a general humanistic orientation of the individual while working with information. In addition, medical students master the following professionally important values: love and respect for people, professional duty, assertiveness, self-development, self-education, optimism, empathy.

The assimilation of these values by future medical professionals during their work with information allows us to ensure that the specifics of their future professional activities are taken into account.

Conclusion. Clarification of the content of the structural components of the information competence of foreign students of medical specialties makes it possible to move on to the issue of determining the organizational aspects of its formation in the educational environment of the university.

REFERENCES:

1. Закон України «Про вищу освіту». URL: <http://zakon4.rada.gov.ua/laws/show/1556-18>; Закон України «Про освіту» – <http://zakon5.rada.gov.ua/laws/show/2145-19>
2. Стратегія розвитку медичної освіти. URL: https://moz.gov.ua/uploads/1/8475-medical_education_analytics.pdf
3. Стандарт вищої освіти другого (магістерського) рівня, галузь знань 22 Охорона здоров'я, спеціальність 222 Медицина. URL: <https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2021/11/09/222-Medytsyna.mahistr.09.11.pdf>
4. Закусилова Т. О. Формування основ професіоналізму майбутніх медичних сестер у процесі фахової підготовки : дис. кан. пед. наук 13.00.04. Класичний приватний університет. Запоріжжя, 2018. 318 с.
5. Ковтун О. М. Формування світоглядної культури майбутніх медичних сестер засобами деонтологічного підходу : дис. ... канд. пед. наук: 13.00.04. Рівно, 2020. 336 с.
6. Свиридчук В. В. Формування інформаційно-комунікативної компетентності майбутніх магістрів медсестринства на засадах технологічного підходу : дис. ... канд. пед. наук: 13.00.04. Житомир, 2018. 347 с.
7. Ісаєва О. С. Формування особистісно-професійної культури майбутніх лікарів у процесі гуманітарної підготовки : монографія. Харків : «Смуґаста типографія», 2015. 364 с.
8. Свиридчук В. В. Формування інформаційно-комунікативної компетентності майбутніх магістрів медсестринства на засадах технологічного підходу : дис. ... канд. пед. наук: 13.00.04. Житомир, 2018. 347 с.
9. Бичко М. В. Підготовка майбутніх сімейних лікарів до застосування медичного обладнання в професійній діяльності : автореф. дис. ... канд. пед. наук: 13.00.04. Хмельницький, 2021. 20 с.
10. Яцишина О. В., Мельничук І. М. Особливості професійної підготовки іноземних студентів вищих медичних навчальних закладів. Науковий вісник Ужгородського університету. Серія: Педагогіка. Соціальна робота. Ужгород : Говерла, 2013. Вип. 27. С. 119–121.
11. Левенок І. Професійно орієнтований текст як засіб формування мовно комунікативних навичок іноземних студентів медичних спеціальностей. *Педагогічні науки: теорія, історія, інноваційні технології*. 2018. № 4 (78). С. 112–123.
12. Авраменко Н. О. Підготовка майбутніх лікарів-іноземців до оволодіння професійною термінологією у медичних закладах вищої освіти : дис. ... канд. пед. наук: 13. 00.04. Хмельницький, 2019. 354 с.
13. Ковтун О. М. Формування світоглядної культури майбутніх медичних сестер засобами деонтологічного підходу : дис. ... канд. пед. наук: 13.00.04. Рівно, 2020. 336 с.
14. Закусилова Т. О. Формування основ професіоналізму майбутніх медичних сестер у процесі фахової підготовки : дис. кан. пед. наук 13.00.04. Класичний приватний університет. Запоріжжя, 2018. 318 с.
15. Ілясова Ю. С. Професійна підготовка майбутніх молодших медичних спеціалістів у процесі вивчення фахових дисциплін : дис. ... док-ра філос.: 015. Вінниця, 2020. 338 с.
16. Назаренко Л. В., Мельничук І. М. Зміст та структура професійної компетентності майбутніх медичних сестер. *Медсестринство*. 2014. № 4. С. 40–43.
17. Стечак Г. М. Педагогічна підготовка майбутніх сімейних лікарів у медичному університеті : дис. ... канд. пед. наук: 13.00.04. Львів, 2017. 282 с.
18. Назаренко Л. В., Мельничук І. М. Зміст та структура професійної компетентності майбутніх медичних сестер. *Медсестринство*. 2014. № 4. С. 40–43.
19. Куренкова К. М. Формування професійних цінностей майбутніх медсестер у процесі фахової підготовки : автореф. дис. на здобуття наук. ступеня канд. пед. наук: 13.00.04. Харків, 2009. 21 с.
20. Остраус Ю. М. Педагогічні умови формування професійно-комунікативної культури майбутніх сімейних лікарів : дис. канд. пед. наук за спеціальністю 13.00.04 Вінницький державний педагогічний університет імені Михайла Коцюбинського. Вінниця, 2020. 336 с.