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*Academic Requirements of Medical Students in the Context  
of Their Professional Education*

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Wymagania akademickie studentów medycyny w kontekście ich kształcenia zawodowego

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ABSTRACT

The research aims at studying academic requirements of medical students in the context of their professional education. The paper defines the appropriateness of academic goals in relation to modern professional trends and requirements of future health care professionals.

The survey involved 407 participants. It was directed at defining the state of student's learning environment at the department of Latin and foreign languages, in particular it concerned the quality and efficacy of learning and teaching the subject "English for professional purposes". The results prove that all of the defined academic aims of the subject "English for professional purposes" correspond to academic requirements of medical students. The following is confirmed by a significantly higher number of responses "very important" and "important" compared to the responses "unimportant" and "absolutely unimportant" ( $p < 0.05$ ), while evaluating the importance of the academic aim. Thus, the performed analysis of survey results concerning the academic requirements of medical students confirmed the appropriateness of setting academic goals in the context of professional education of future physicians. The system of academic goals aids realization of competence-based approach in higher medical education and consequently the development of professional readiness to communicate in a medical setting with health care professionals and patients.

**Keywords:** Ukraine; medical education; English; aim

## INTRODUCTION

Student-centered educational approach in medical education is defined as the central component of competence-based learning (Maniuk, 2013), since it determines the effectiveness of academic process, satisfaction of students with learning and its correspondence with their academic and future professional requirements (Nychkalo et al., 2020). Student-centered learning is primarily realized by implementing the system of academic goals directed at obtaining professional skills required in a medical setting: practical clinical knowledge; communication skills; moral and ethical values. The academic goals direct organizational, processual and controlling aspects of the learning environment. In addition, they play a significant role in the academic process, influencing students' reflection and understanding of the significance of certain subjects and topics, as well as reflecting on general professional competence of future physicians.

Competence-based learning, which is effectively implemented in the system of higher medical education, involves obligatory realization of professional academic requirements of future physicians and development of educational and academic goals according to these requirements. The following confirms the necessity for continuous study of the student learning environment and quality of academic process (McGhee et al., 2007).

The problem of medical education is widely researched in Ukraine and worldwide. Development of communication skills is studied by Hutor and Sodomora (2022), who confirm that the student-centered approach facilitates competency-based learning in higher medical education institutions, aids the quality improvement of learning and teaching various subjects. The research of Nekrashevych (2022) focuses on the realization of the student-centered approach during linguistic training of students. Lysytsia, Polishchuk and Kolesnichenko (2023) and Maniuk (2013) describe methodology of professional training of future physicians.

This paper aims at researching academic requirements of medical students in the process of their communicative training in English. The additional tasks include defining the appropriateness of academic goals, learning content and methodical approaches in the educational process in relation to modern social trends and requirements of health care professionals.

## METHODS

The survey involved 407 first-year medical students – 308 (75.7%) female and 99 (24.3 %) male participants. It was performed in the period from March 12, 2023 till April 19, 2023. The survey was directed at defining the state of

a student's learning environment at the department of Latin and foreign languages, in particular, it concerned the quality and efficacy of learning and teaching the subject "English for professional purposes". The questionnaire was self-designed on the basis of similar scientifically verified evaluation scales of learning environment (McGhee, 2007; Bakhshialiabad et al., 2015; Genn, 2001). However, it included specific questions aimed at determining academic aspects in terms of war influence on the educational process. The questionnaire was performed online in Google Form and consisted of 29 closed questions. It was validated in medical students and ethically improved.

This paper analyzes the received data related solely to the correspondence of academic aims of "English for professional purposes" with individual learning and future professional requirements of medical students. The questionnaire included a block of 19 sub-questions "evaluate the importance of academic aims". Participants had to evaluate each of 19 academic aims by choosing one option out of four suggested ones, namely: "very important", "important," "unimportant", and "absolutely unimportant". The results are presented as absolute values of positive answers, as well as their relative value in percent (%). The difference between groups of categorized indices is defined by the frequency scale and Pearson's chi-squared test. The difference was considered significant in case of  $p < 0.05$ . Statistical calculations were performed in the R Studio software.

## RESULTS

All of the defined academic aims of the subject "English for professional purposes" were evaluated as "very important" or "important", which is confirmed by significantly higher number of responses "very important" and "important" compared to the responses "unimportant" and "absolutely unimportant" ( $p < 0.05$ ). The following indicates their correspondence with present academic and future professional requirements of medical students.

The 19 academic goals were subdivided into four categories: 1) directed at the development of linguistic skills (Table 1); 2) aimed at the development of communication skills (Table 2); 3) associated with the development of professionalism and personal ethics (Table 3); 4) related to the development of motivation and self-management skills (Table 4).

Table 1. Significance of academic aims related to linguistic skills

No	Academic aims	Absolute and relative value (number of responses, %)			
		Very important	Important	unimportant	Absolutely unimportant
1	Development of medical terminological vocabulary	241 (59.2%)	160 (39.3%)	5 (1.2%)	1 (0.2%)

2	Development of grammatical skills	122 (30%)	242 (59.5%)	37 (9.1%)	6 (1.5%)
3	Development of listening skills	171 (42%)	200 (49.1%)	27 (6.6%)	9 (2.2%)
4	Development of general lexical skills	193 (47.4%)	191 (46.9%)	21 (5.2%)	2 (0.5%)
5	Improving business English written skills	118 (29%)	201 (49.4%)	78 (19.2%)	10 (2.5%)
	Average value	169	198.8	33.6	5.6

Source: Author's own elaboration.

Table 2. Academic aims related to the development of communication skills

No	Academic aims	Absolute and relative value (number of responses, %)			
		Very important	Important	unimportant	Absolutely unimportant
1	Development of written communication	122 (30%)	211 (51.8%)	63 (15.5%)	11 (2.7%)
2	Development of oral communication	230 (56.5%)	149 (36.6%)	22 (5.4%)	6 (1.5%)
3	Development of physician-patient communication skills	268 (65.8%)	129 (31.7%)	6 (1.5%)	4 (1%)
4	Development of professional thinking skills	213 (52.3%)	161 (39.6%)	29 (7.1%)	4 (1%)
5	Development of critical thinking	219 (53.8%)	165 (40.5%)	20 (4.9%)	3 (0.7%)
	Average value	210.4	163	28	28

Source: Author's own elaboration.

Table 3. Academic aims related to the development of professionalism and ethics

No	Academic aims	Absolute and relative value (number of responses, %)			
		Very important	Important	unimportant	Absolutely unimportant
1	Development of patriotic values	176 (43.2%)	172 (42.3%)	41 (10.1%)	18 (4.4%)
2	Development of tolerance	185 (45.5%)	181 (44.5%)	29 (7.1%)	12 (2.9%)
3	Multicultural development	139 (34.2%)	184 (45.2%)	69 (17%)	15 (3.7%)
4	Development of empathy	117 (28.7%)	207 (50.9%)	60 (14.7%)	23 (5.7%)
	Average value	154.25	186	49.75	17

Source: Author's own elaboration.

Table 4. Academic aims related to motivation and the development of self-management skills

No	Academic aims	Absolute and relative value (number of responses, %)			
		Very important	Important	unimportant	Absolutely unimportant
1	Development of creativity	151 (37.1%)	199 (48.9%)	44 (10.8%)	13 (3.2%)
2	Development of self-study and self-organization skills	156 (38.3%)	194 (47.7%)	42 (10.3%)	15 (3.7%)
3	Development of projecting skills	104 (25.6%)	185 (45.5%)	97 (23.8%)	21 (5.2%)
4	Development of reflection	135 (33.2%)	187 (45.9%)	69 (17%)	16 (3.9%)
5	Motivation of students	227 (55.8%)	155 (38.1%)	16 (3.9%)	9 (2.2%)
	Average value	154.6	184	268	14.8

Source: Author's own elaboration.

The analysis of mean values positive (“very important” and “important”) vs negative (“unimportant” and “absolutely unimportant”) indicates that the category of aims “communication skills” fulfills the requirements the survey participants to the largest extent, while the category “motivation and self-management skills” received the largest number of negative answers (278.8/407) ( $p < 0.05$ ) (Figure 1).

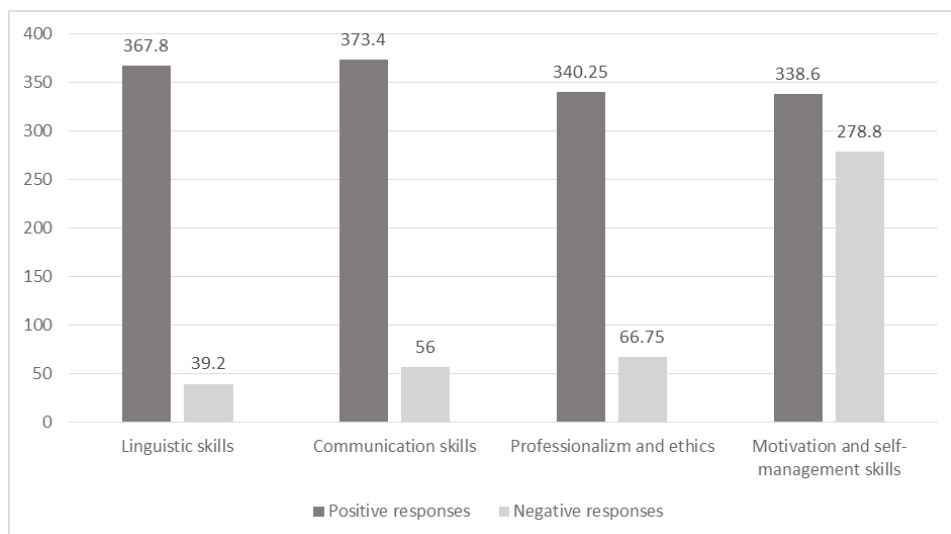


Figure 1. Mean values positive (“very important” + “important”) vs negative (“unimportant” + “absolutely unimportant”) responses

Source: Author's own elaboration.

The study participants considered the following aims as very important: 1) Development of physician-patient communication skills – 268/407 (65.8%); 2) development of medical terminological vocabulary – 241/407 (59.2%); 3) development of oral communication– 230/407 (56.5%); 4) motivation of students–227/407 (55.8%); 5) development of critical thinking–219/407 (53.8%); 6) development of professional thinking – 213/407 (52.3%); 7) development of lexical skills – 193/407 (47.4%); 8) development of tolerance – 185/407 (45.5%); 9) development of patriotic values – 176/407 (43.2%) (Figure 2).

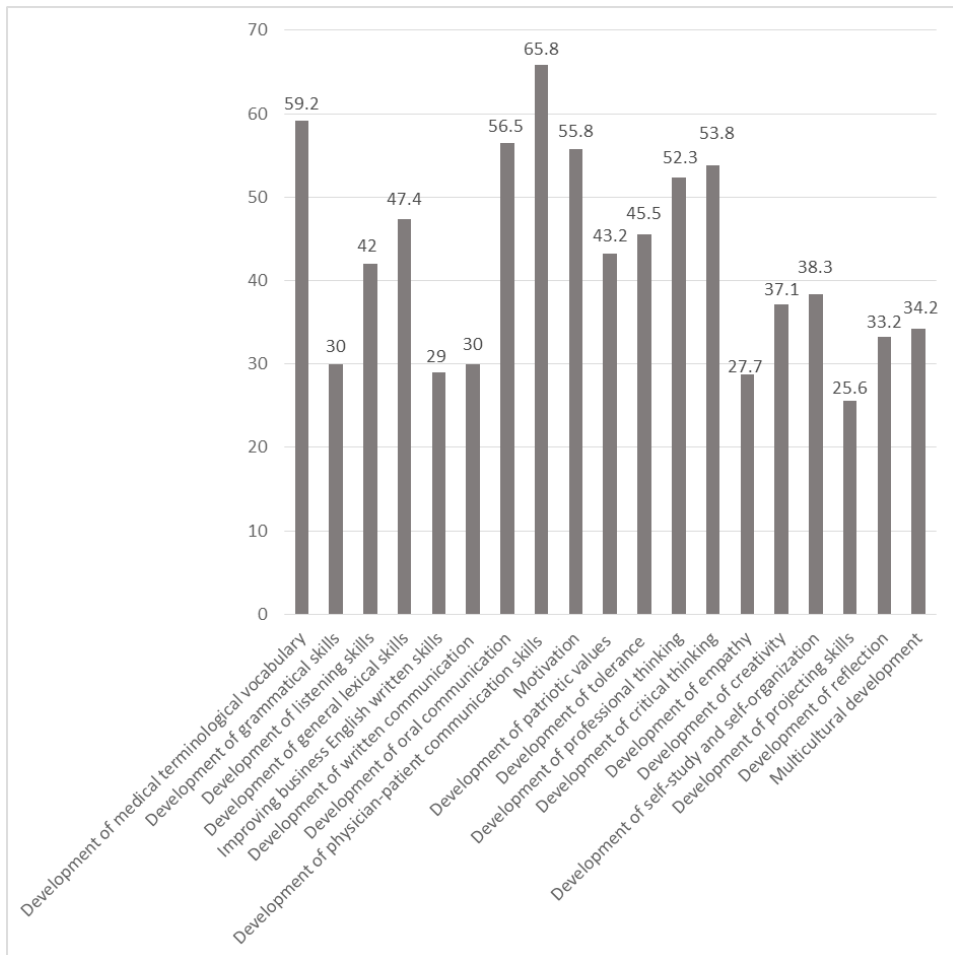


Figure 2. Relative values (%) of responses “very important”

Source: Author’s own elaboration.

The aims defined by students as “important” (received the highest number of responses “important”) include: 1) development of grammatical skills – 242/407

(59.5%); 2) development of empathy – 207/407 (50.9%); 3) development of written communication skills – 211/407 (51.8%); 4) development of business writing English skills – 201/407 (49.4%); 5) development of listening skills – 200/407 (49.1%); 6) development of creativity – 199/407 (48.9%); 7) development of self-study and self-organization skills – 194/407 (47.7%); 8) development of reflection – 187/407 (45.9%); 9) development of projecting skills – 185/407 (45.5%); 10) multicultural development – 184/407 (45.2%).

The analysis of positively evaluated responses (very important and important) showed the following hierarchy of results: 1) development of medical terminological vocabulary (401/407; 98.5%); 2) Development of physician-patient communication skills (397/407; 97.5%); 3) development of general lexical skills and skills of critical thinking (384/407; 94.3%); 4) motivation of students (382/407; 93.9%); 5) development of oral communication skills (379/407; 93.1%) (Figure 3).

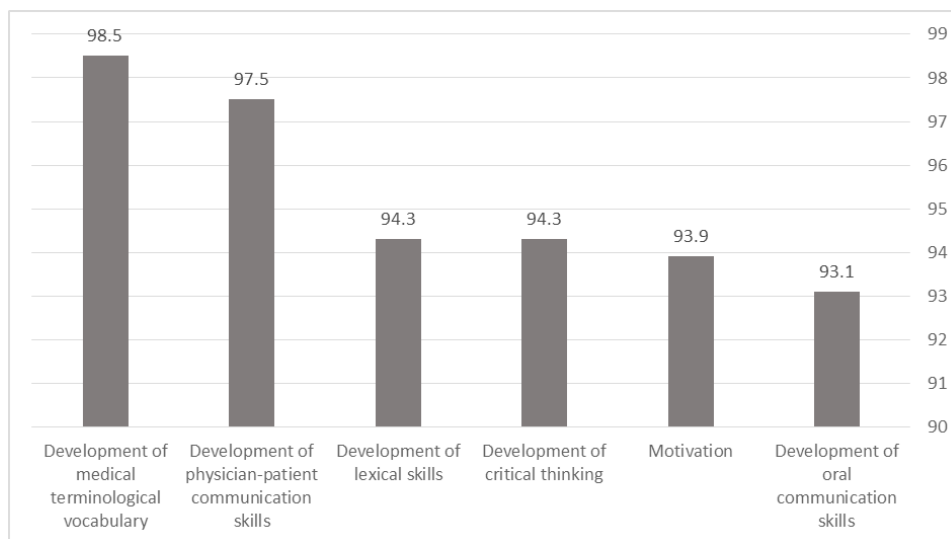


Figure 3. Relative values (%) of positive responses (“very important” + “important”)

Source: Author’s own elaboration.

Approximately 1/5 of all survey participants evaluated several academic aims as “unimportant” or “absolutely unimportant”. These aims that received the most negative feedback include: development of projecting skills (118/407; 30%); development of Business English written skills (88/407; 21.7%); development of reflection (85/407; 20.9%); multicultural development (84/407; 20.7%), development of empathy (83/407; 20.4%).

Figure 4 demonstrates the relative values of responses – “absolutely unimportant”.

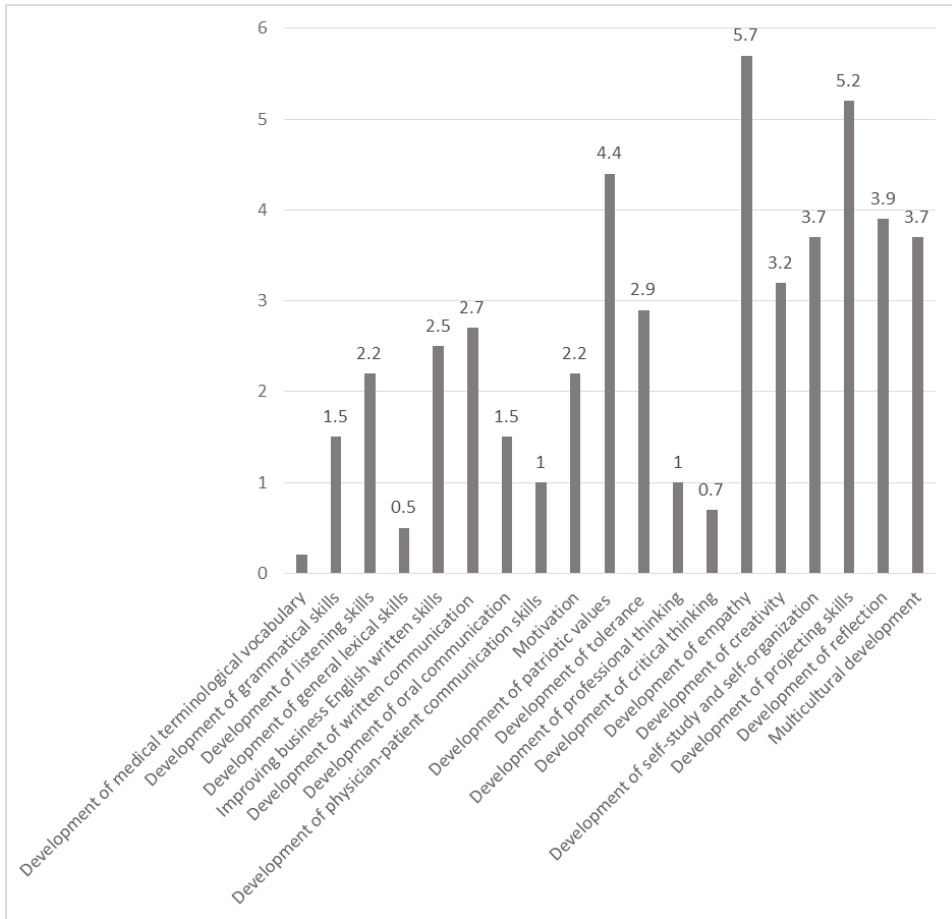


Figure 4. Relative values (%) of responses – “absolutely unimportant”

Source: Author’s own elaboration.

## DISCUSSION

The results of performed research prove the correspondence of learning, developmental and tutorial aims of the subject “English for professional purposes” with the requirements of first-year medical students at Lviv national medical university. However, the analysis has exposed specific details, which require further discussion.

The received data indicate that all academic aims specified by the survey participants as very important are related to communicative competence of future physicians, their readiness to provide qualitative and effective interaction in the professional medical setting with both professionals and non-professionals.



In addition, to the need of acquiring English medical terminological vocabulary (401/407; 98.5%), the responders indicated the development of physician-patient communication skills as very important (397/407; 97.5%). This index confirms understanding of potential professional problems and challenges associated with future health care careers by medical students. Communication in the medical setting forms a significant part in the professional activity of physicians. The ability and skills to communicate effectively and correctly with patients and their relatives, colleagues, chief managers as well as other medical staff require specific communicative training. The communicative skills are basically revealed during medical encounters while completing medical histories, stating diagnosis, explaining the course of the disease, promoting preventive measures and explaining possible negative consequences of irresponsible treatment and using medications, delivering bad news, etc.

The communicative competency of future physicians develops as a consequence of clinical training combined with development of specific clinical knowledge, resulting in communicative competence: linguistic, procedural and ethical skills (Hutor & Sodomora, 2022). All of the academic aims of “English for professional purposes” are directed at the development of communicative competence. The combination of aims resulting in the development of linguistic, communication, ethical and self-management skills enhance existing knowledge and contribute to the development of communication competency. However, the survey results indicate certain controversy in students’ understanding of the content of physician-patient communication. Despite the fact of the number of positive answers for the aim “development of physician-patient communication skills,” was the largest, the number of responses confirming insignificance of “developing empathy” (83/407, 20.4%) was the significant compared to other academic goals ( $p < 0.05$ ).

One of the indices characterizing the level of professional competence of a physician is effective communication with patients involving the following knowledge and skills: 1) systemic knowledge on the notion, structure, functions and peculiarities of communication, communication styles, creative thinking, etc.; 2) general and special communication skills enabling the contact with the interlocutor, perceptive skills; 3) procedural knowledge including the skills of participating in a dialogue; 4) emotional intellect, involving the humanistic communication, interest to others, readiness to communicate, high level of empathy and reflection (Hutor & Sodomora, 2022). The following fact requires further explanation to medical students, specifying its clinical significance and outcomes, since the survey results revealed some insignificant negative results ( $p > 0.05$ ) concerning the development of ethics (16.4%) and a significant number of negative answers concerning self-management skills (68.5%).

The main criteria of developed communication include: 1) perceptive competence which is realized while communicating in the form of the dialogue using and perceiving verbal and non-verbal communication tools; 2) empathy which is characterized by the ability to understand emotions of others, reach mutual understanding, consent and affection; and 3) tolerance that involves care about others with respect, eliminating humiliation and interpersonal or multicultural differences, as well as patience in communication; and 4) reflection – active and targeted understanding of personal characteristics by the individual.

The organization and the development of professional communicative competence at higher medical institutions should occur by implementation of competence-based educational approach, correspondence of academic process and the specific learning, developmental and tutorial aims and developing the system of specific goals of academic disciplines directed at the development of professional medical and communicative competencies.

## CONCLUSIONS

Thus, the performed analysis of survey results concerning the academic requirements of medical students and their correspondence with the aims of the subject “English for professional purposes” confirmed the appropriateness of approved academic goals in the context of professional education of future physicians. The system of academic goals aids realization of competence-based approach in higher medical education and, consequently, contributes to the development of professional communicative readiness for interaction in medical setting with health care professionals and as a rule non-professional individuals – patients.

Moreover, the academic goals determined as most important should be developed and fortified by appropriate academic content. The goals defined as less important should be further analyzed for their appropriateness in the educational process, in particular in the course of “English for professional purposes”. Academic goals underestimated by medical students include “development of empathy”, which is a substantial component of professional medical communication and “development of written communication skills”, which prepares the medical students for their potential future research. The significance of these skills should be explained to medical students more precisely, directing their reflection and understanding of the abovementioned skills.

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## ABSTRAKT

Badania mają na celu poznanie wymagań akademickich studentów medycyny w kontekście ich kształcenia zawodowego. W artykule zdefiniowano adekwatność celów naukowych w odniesieniu do współczesnych trendów zawodowych i wymagań przyszłych pracowników ochrony zdrowia.

W badaniu wzięło udział 407 uczestników. Miało ono na celu określenie stanu środowiska uczenia się studentów na oddziale łaciny i języków obcych, w szczególności dotyczyło jakości i efektywności uczenia się i nauczania przedmiotu „język angielski do celów zawodowych”. Wyniki dowodzą, że wszystkie wymienione cele naukowe przedmiotu „Angielski do celów zawodowych” odpowiadają wymaganiom akademickim studentów medycyny. Potwierdza to istotnie większa liczba odpowiedzi „bardzo ważne” i „ważne” w porównaniu z odpowiedziami „nieważne i zdecydowanie nieważne” ( $p < 0,05$ ) przy ocenie ważności celu naukowego. Tym samym przeprowadzona analiza wyników badań ankietowych dotyczących wymagań akademickich studentów medycyny potwierdziła trafność stawianych celów akademickich w kontekście kształcenia zawodowego przyszłych lekarzy. System celów akademickich sprzyja realizacji podejścia opartego na kompetencjach w wyższym szkolnictwie medycznym, a co za tym idzie rozwijaniu profesjonalnej gotowości do komunikowania się w środowisku medycznym z pracownikami służby zdrowia i pacjentami.

**Słowa kluczowe:** Ukraina; uniwersytet medyczny; angielski; cel