Development of Communication Competence in Foreign Medical Students at English for Careers Classes

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Abstract: The article reviews the results of the investigation of the development of communication competence of foreign medical students of Donetsk National Medical University, located in Ukraine. The research objective is to show the importance of the designed system of practical classes of English for careers on evidence-based medicine in Ukrainian medical universities. The article submits the data, received in the process of the experimental work, aimed at developing foreign students' communication competence at English for careers classes. The survey is aimed at determination of the primary level of speaking skills of the 3rd year students in their communication with peers, lecturers, colleagues, patients, relatives and friends to define the students' readiness for development of communication competence at English for careers classes at the university. The questionnaire, as the first diagnostic part of the experiment, was carried out to check out the students' level of communication skills at the initial stage in control and experimental groups. Formative stage of the research included gradual elaboration and implementation of the system of English classes that included various speaking activities such as interviewing, discussions, giving feedback, making descriptions, presentations, research papers and essays, written online debates and monographs for developing communication competence. The diagnostic results of the experiment presented at its final part proved the importance of the work, done for the development of communication competence of future doctors at English for careers classes. According to the Mann-Whitney U test, the entire work confirmed the hypothesis.

Keywords: *communication competence; English as a foreign language; medical education; educational methods; medical students; doctor-patient communication competence; learning outcomes.*

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1. Introduction

Without question, a successful contemporary doctor must be equipped with a vast range of knowledge in medicine with excellent clinical and communication skills. Doctors should be able to convey the instructions to the patients, presenting professional medical terms clearly, distinctly in a humanely manner while engaging with colleagues, patients and families.

Swish scientists (Wallman et al., 2013), pointed out the main role of the physician as a “communicator” of information and help for patients, other medical professionals and the society, is acknowledged as a essential element of the commitments of a doctor in professional activity. They admitted medical education is changing to show the problems are in creating a curriculum. According to the syllabus medical students should be provided with the professional skills, knowledge and communication competence. The future doctors should master the communication competence during their training medical course at the university.

Brian H. Spitzberg in the paper “Introducing Communication Competence to the Health Professions” in 2013, highlighted the substantial role of communication competence in modern accounts of effectual health care service. The scientist stresses that it is very important to develop the communication skills at lectures in specific disciplines as surgery, dentistry, paediatrics, cardiology and etc., with more related specialization (Spitzberg , 2013, p. 126).

The issue of importance of development communication competence for physicians was studied by eminent educators: Baig et al. (2009), Choudhary and Gupta (2015), Dacre et al. (2004), Ortega et al. (2019), Wouda and Harry (2012) and others, with the interest to their investigations determining the objective of our work.

The purpose of our survey is to study the process of developing and enhancing the communication competence of third (3rd) year foreign students of the “Physician” specialty, based on various types of improvement of students’ speech activities at English for careers classes at Donetsk National Medical University.

This idea came to force after analysis of the research “Communication skills training in postgraduate medicine: the development of a new course” (Dacre at al., 2004), where the scientists described an implementation course in communication competence for postgraduate doctors, that was highly appreciated by the participants as for its content and the format of presentation. As reported by Dacre et al. (2004), there should be a balance between the exercises in certain scenarios and productive communication. It

gives more possibilities to solve certain practical problems. The researchers used the word “scenarios” to stress the importance of well-developed outlines, plans for specially organized classes for cultivating communication competence in doctors.

The research objective is to determine the state of investigation of problems of communication competence of foreign medical students in scientific and pedagogical literature and clarify the concept of “communicative competence of physician” and evaluate the students’ assertiveness, clarity, positivity as the main components of communication of a physician. The research hypothesis is the use of created speaking activities at English for careers classes on evidence-based medicine leads to the development of communication competence in foreign medical students. We have endeavoured to find the answer to the question: how various speaking activities (interviewing, discussions, giving feedbacks, role-playing, making descriptions, presentations) can promote the development of doctor’s communication competence at English for careers classes.

1.2. Theoretical background

The issue of the development of doctor’s communication competence in medical universities has not been highlighted enough in the literature sources. The evaluation of recent research confirms that productive communication is crucial in the healthcare delivery (Wallman et al., 2013). Unfortunately, the problem of the development of foreign medical students’ communication competence has not been investigated in the works of Ukrainian scientists. Nonetheless, German scientists (Ammenwerth et al., 2000), **drew our attention to the influence of information and communication technologies in everyday medical practice, which can significantly facilitate doctor-patient communication and improve the quality in health care service.** Wallman et al. (2013) propose two (2) broad categories of communication competence, i.e. oral and written communication skills. They presented the category “written” communication competence as academic, clinical, and reflective. They admitted that writing skills are possible to develop through the research papers, comprehensions, essays, written online debates and discussions. Due to the analysis of the previous researches, we define the term “communication competence of a physician” as a certain level of formation of interpersonal and professional experience of interaction with fellow care professionals, patients and their family and friends – often about difficult or sensitive matters, which are necessary for a physician to function successfully in the professional sphere and society.

Berman and Chutka (2016) raise the problem of assessing effective physician-patient communication skills. The authors confirm that, with the nonverbal communication the doctor can express his support, warmth, empathy, reassurance, and care. It is important to emphasize the doctor patient-centred interaction throughout training at medical institutions and continuing medical education. A medical interviewing is the main element in professional health care communication. The research of Beliveau et al. (2014) presented a simplistic view of what a cardiologist must achieve to be considered a competent physician. The scientists discussed the role of professional societies and academic medical centres in facilitating the attainment and documentation of competence. Baig et al. (2009) also pointed out the issue of assessing clinical communication skills in physicians. They made the research to add evidence of the semantic and contextual specifics of communication skills and assess the functionality of a common tool for assessing the communicative competence of graduates of international medicine. According to their findings, we include the useful activities for developing of communication competence at English for careers classes.

Travaline et al. (2005) presented the problems of patient-doctor communication such as the ability to monitor or articulate, speak a foreign language, dysphonia, limited time to visit or fail, unpredictability or one-on-one meeting, disease, psychological state, emotional stress, racial, gender and cultural differences, and others. The educators must consider all these barriers with an effort to simulate the real situation in practice with the students. Moore et al. (2012) proved that the ability to support the successful doctor-patient relations should be gained throughout the medical training programme at universities. Analysis of recent research confirms that, the capacity of effective communication is the basic doctor's competence, and learning communication skills of formation are positive investment for much better public health in the future (Choudhary & Gupta, 2015). While highlighting the components of communication competence, we took into consideration the research ideas of Biglu et al. (2017) that the communication and interpersonal skills of physicians provide the ability to gather adequate and thorough information from patients to assist with diagnosis, appropriate counselling, instructing the therapeutic plan, and establishing appropriate rapport between patient and physician (Biglu et al., 2017, p. 195).

Wu et al. (2014) made a standardized family model for the assessment and improvement of patient-physician communication skills for practical neurosurgeons.

Our designed system of practical classes for the development of the main components of the communication competence in foreign medical students at English for careers classes can improve the low results of evaluation of doctor-patient communication competence in the physician's professional discipline.

A careful review of previous studies showed modern conditions impose new requirements on doctors, among which the development of students' communicative competence has gained increasing priority. Our research has shown that the readiness of foreign medical students to communicate in their professional activities is currently at a sufficient level which calls for a combined effort from all parties involved to improve the level during their study at the university.

2. Materials and Methods

2.1. Participants

The research involved the 3rd year students of International Medical Faculty of Donetsk National Medical University with a control group of 20 students and an experimental group of 19 students. Their participation was voluntary and they were provided with all necessary information about the experiment procedures, purposes and outcomes. For identifying the readiness of teachers for the process of development of communication competence of medical students, 20 teachers were involved in questioning. They were teachers of foreign languages for careers in Donetsk National Medical University.

2.2. Apparatus and Materials

During the experiment, we used computer and multimedia equipment (computer, the Mann-Whitney U test electronic calculator, the Plickers' application, screen, linguon (vocabulary) and headphones) and demonstration equipment (printed matters, cards for individual work, models-application of dialogues, and application materials for teaching oral speech). To proceed with the aim of our survey we applied the methods of experimental research such as empirical – questionnaire, pedagogical observation, statistical and mathematical methods for quantitative and qualitative analysis of data obtained during survey and graphical method. In the process of our study, we used the data collection tools, which provided us with answers to the technique of successful development of communication competence. These are, interviews, observation, informal talks with participants, discussions with students and lecturers, problem-

based tests, students' tests for skills level assessment, teachers' feedback, the experimental activities, comparison the data from personal students' and teachers' opinion. Tests, questionnaires, surveys, interviews were used to check the readiness of lecturers for the process of developing students' communication competence and determining the level of development of individual components of communication competence.

2.3. Research Procedure

The research was carried out in several stages. The first stage focussed on studying the initial level of formation of communication competence. The questionnaire "Revealing the initial level of communication competence of foreign students" was used. In the survey, the Plickers' application was adopted, which simplified the statistical data collection process.

At the second stage of the research, we studied the readiness of teachers for the process of development students' communication competence. Before conducting an experiment concerning the development of communication competence, we decided to check the readiness of the teaching staff for this process. This test was an anonymous survey of teachers of Donetsk National Medical University in Kropyvnytskyi. Ten lecturers, who actively conduct classes in English for careers for future physicians (the 1st, 2nd and 3rd year students of International Medical Faculty) were participants of this survey.

There was an ascertaining experiment at the third stage. We determined the level of the development of individual components of communication competence of international medical students. At this stage, the entrance diagnostic work # 1 was carried out, which was a control work based on the results of the first semester of the 3rd academic year. According to the structure of communication competence given above, the work was composed of 3 tasks. Maximum three (3) points were awarded for each correctly completed task. The basis is a three-factor model of the development of communication competence. There were three (3) evaluation components: assertiveness, clarity and positivity (Belim & Almeida, 2018). There was the basic level (1-3 points), intermediate level (4-6 points) and advanced level (7-9 points) in students' groups. Table 1 below demonstrates the criteria and expressiveness in points for evaluating the development of the individual components of communication competence.

Table 1. Three-factor model for evaluating the development of communication competence based on Belim and Almeida (2018) description

Evaluation criteria	Points
Assertiveness: <ul style="list-style-type: none"> - Weak: a student confirms the understanding of the interrogator and guides a patient to answer and ask. - Medium: a student initiates, maintains and concludes a dialogue, speaks free about wishes and troubles and practises good manners and politeness. - High: a student practices the confidence, form of behavior characterized by a confident statement without evidence, respects heterosexual right without their violation; reveals self-estimation and mutual loyalty. 	1 2 3
Clarity: <ul style="list-style-type: none"> - Weak: a student understands the target audience, encourages questions and greets patients warmly. - Medium: a student invites patient participation; matches patients' vocabulary, gives concrete advice and recommendations and shows graphics. - High: a student is able to understand immediately, specifically and concretely, communicates for coherence and consistency, uses an evidence-based approach for patient's treatment and written instructions to make it easier to remember. 	1 2 3
Positivity: <ul style="list-style-type: none"> - Weak: a student motivates the patient to speak positively as "I choose", "I can", "I will" (dominance and self-effectiveness). - Medium: a student makes a optimistic attitude towards present and future success, and perseveres achieving aims, redirects ways of achieving success. - High: a student takes on and makes the necessary efforts to succeed in challenging problems and speaks in optimistic mood. When a student is faced with challenges and adversity, he endures and recovers in order to succeed. 	1 2 3

Source: developed by the description of Belim and Almeida (2018)

At the fourth stage called the formative experiment we created the system of practical classes in English for careers, based on developing the students' communication skills. The goal was to develop a system of practical classes in English for careers based on developing the communication skills of the 3rd year foreign students. The practical classes system is designed in such a way that the auditory classes are not sequential.

The system includes 10 practical classes based on the different forms of developing communication skills (Table 2).

Table 2. The system of the practical classes in English for careers as part of a formative experiment

#	Theme of the class with goal setting	Activity
1	Learning how to take a patient's history and the importance of a patient's history	"Role-play taking a history", "Interviewing"
2	Learning how to communicate with staff, agreeing with an opinion	"Discussion and role-play agreeing with an opinion"
3	Learning how to communicate with patients, making suggestions	"Role-play making suggestions", "Written communication guidelines"
4	Learning about challenges in the medical profession, describing a concern	"Project work describing a concern, discussion of a tic-tac-toe grid"
5	Learning how to describe pain, asking about pain	"Creating a scenario to take a history and discuss the management and written pain assessment form"
6	Learning the meaning of common abbreviations, clarifying information	"Creating the patient evaluation and role play clarifying information"
7	Learning how to give advice of maintaining hygiene	"Role-play giving advice"
8	Learning how to become a doctor, using superlatives	"Role-play an interview"
9	Learning about symptoms, asking about symptoms	"Discussion of doctor's notes" and "Project work asking about symptoms"
10	Learning how to give a physical examination, informing a patient	"Making medical report" and "Instructional guide"

Source: developed by the authors' conception

At the fifth stage, we made a control experiment involving an analysis and evaluation of the effectiveness of experimental work. The goal of the control experiment was to compare the results of the diagnostic study and draw conclusions. To study the level of development of communication competence, after the developed system of practical classes, the students were re-diagnosed. Students from the control and experimental groups were offered the diagnostic work # 2 "Studying the development of students' communication competence" (See table 4).

The sixth stage was improving the knowledge of lecturers about development of communication competence of foreign medical students at classes “English for careers”.

In order to popularize the technology of improvement of communication competence within the framework of the study, a presentation was made at the methodological seminar of English lecturers at the Department of Languages and Humanities # 2 of Donetsk National Medical University with the topic “Development of communication competence of physicians for foreign medical students”.

2.4. Research ethics

The data collection has been performed in accordance to the general ethical principles of any research such as honesty, objectivity, integrity and openness. The research was aimed at preparing the foreign medical students to real communication situations in their future career. It enhanced students' confidence and allowed them to make their own decisions. The research was held by the lecturers of the Department of Languages and Humanities # 2 of Donetsk National Medical University. The observers' team included lecturers from the department who did not participate in the research to keep the objectivity of the process and results. Before the experiment started, the standards and operational guidelines for ethics testing (World Health Organization, 2011) were recognized and the participants were informed about the nature of experiment and the confidentiality of the observation data. Students were able to stop the participation at any time without any academic consequences. It was emphasised that results did not deal with individual abilities assessment and data would not influence the academic performance.

3. Results

The analysis of the results obtained during the questioning at the first stage shows the following data:

1) in the control group 28% of students are at a high level, 67% are at an average level and 8% are at a low level;

2) in the experimental group 35% are at a high level, 60% at an average level and 5% at a low level. After analyzing the information, it was found that in the experimental group the average level of communication competence development is 7% lower than in the control group, the sufficient level of communication competence development is 3% lower

than in the control group, and the high level of communication competence development is 7% above than in the control group.

At the second stage of the research, there are the results of the readiness of lecturers for the process of development foreign students' communication competence (Figure 1).

Fig. 1. The results of the readiness of lecturers for the process of developing foreign students' communication competence

Source: developed by the authors' conception

Due to the ascertaining experiment, we were able to determine the level of development of individual components of communication competence of foreign medical students (table 3).

Table 3. The degree of development of the communication competence of the control and experimental groups according to level differentiation

	Basic level, %	Intermediate level, %	Advanced level, %
Control group	35	40	25
Experimental group	16	47	37

Source: developed by the authors' conception

The most developed component of communication competence of the foreign students in the control group was positivity. They are worse at communicating with clarity and assertiveness, which tells us about the inability to present information with an evidence-based approach and a confident application without the need for proof. The most developed skills of the students of the experimental group were positivity and assertiveness.

They are worse at communicating, which, just like in the control group, tells us about the inability to present information with an evidence-based approach.

According to the criterion analysis (Mann-Whitney U test) empirical data were obtained:

$$U = (20 \cdot 19) + \frac{20 \cdot (20 + 1)}{2} - 457 = 133.$$

Having determined the critical values of U for different degrees of significance, we construct an axis of significance for the obtained U empirical value before the experiment:

Fig. 2. The axis of significance for the obtained U empirical value before the experiment

Source: developed by the authors' conception

The empirical value of U falls into the zone of insignificance, which means that the null hypothesis H_0 is accepted. Hence it follows that the control and experimental groups are equivalent at the initial stage of the experiment.

Table 4. Results of the development of the components of communication competence

Components of communication competence	Assertiveness, %	Clarity, %	Positivity, %
Ascertaining stage, experimental group of students	37	16	47
Control stage, experimental group of students	55	25	67
Ascertaining stage, control group of students	22	33	40
Control stage, control group of students	31	38	49

Source: developed by the authors' conception

At the stage of the control experiment, we can see the % growth of students that possess such components as assertiveness and clarity.

When analysing the results (Table 4) by level differentiation, it can be seen that the average level of the experimental group increased by 6%, the basic level decreased by 11%, and the advanced level increased by 5%. In the control group, the results were different: the baseline level decreased by 5%, the average level increased by 5%, and the advanced level stayed the same. We calculated the empirical value of U using the formula:

$$U = (20 \cdot 19) + \frac{20 \cdot (20 + 1)}{2} - 498 = 92.$$

Having determined the critical values of U for different degrees of significance, we constructed an axis of significance (Figure 3).

Fig. 3. The axis of significance for the obtained U value after the experiment
Source: developed by the authors' conception

Note that the empirical value of U falls into the zone of significance, which means that the null hypothesis H_0 is rejected and the alternative hypothesis H_1 is accepted.

4. Discussion

The improvement of communication skills of foreign students is an asset for modern medical education. Foreign students are from different countries such as India, Nigeria, Ghana, Egypt, Morocco and others with different cultural and social experiences yet some basic similarities which has a profound influence on their communication competence. However, in their quest to be doctors, there is the need to fine tune their communication competence in the medical field.

The main question of the readiness of foreign medical students to professional communication was raised by our study. Due to our results, it was shown that at the 3rd year of their study, they have a sufficient level of

communication competence and we are able to develop the main components of communication competence at English for careers classes. According to Kee et al. (2018), who pointed out that four main themes of communication errors were identified at the ascertaining stage of our experiment as non-verbal, verbal, content and poor attitudes. The question that arose during this study is how different speaking activities (interviewing, discussions, giving feedbacks, role-playing, making descriptions, presentations) can promote the development of communication competence at classes of English for careers? According to the research findings (Ali et al., 2017), the system of practical classes was developed. The scientists proposed the new curriculum for Harvard Medical School students: practicing navigational communications with patients who respond immediately. It was an innovative research for development of physician's communication competence that we used at English for careers classes. Scientists Ranjan et al. (2015) in the research "How can Doctors Improve their Communication Skills?" stated that, the medical interviewing is a possibility to recognize problems and learn psychosocial recovery. We designed the system of practical classes including the interview for developing communication competence of students. An emphasis was given to the research of Hullman and Daily (2008) which showed that the adaptation to communication and interview with the patient's relatives should be considered as a part of doctor communication competence, but it is not presented in many indicators. The designed system of practical classes includes the development of skills in communication with peers, lecturers, colleagues, patients, relatives and friends. The British researcher, Malik (2017) in his work "The value of writing skills as an addition to the medical school curriculum" showed that the capacity of effective writing is a basic means of carrying scientific and medical data. Writing was our additional activity for development of communication competence, used at English for careers classes.

Despite the results of Wouda and Harry (2012), which show that students achieve the medium level of communication competence through other disciplines, and they do not increase this level at communication courses, the results of our study show that it is possible to increase this level through a system of practical classes. The research of Dong et al. (2015) shows that a tool of their research can be used as an evidence of nonsufficient work on developing communication competence at the beginning of the third year, where specific courses can be successfully appealed and evaluated before the end of medical school.

The designed system of practical classes in English for careers can be applied to students with different levels of development of communication skills. Based on the research of Wouda and Harry (2012), we admit that the 1st year students improve communication competence evaluated by the lecturers to a satisfactory level. That is why we are sure that the 3rd year students have already a kind of communication competence and they need to develop it for successful professional activity. The results of the experiment showed the importance of proposed speaking activities at English classes for foreign students of international medical faculty. They increase the level of their communication skills necessary for future professional activity. Our results mean that it is possible to prepare foreign medical students for future professional communication using the designed system of practical classes on evidence-based medicine. We gained our hypotheses that the use of created speaking activities at English for careers classes on evidence-based medicine leads to the development of communication competence in foreign medical students. According to our research, we define that after using the system of 10 practical classes based on the different forms of developing communication competence of a physician, students have well-developed components of communication competence as assertiveness, clarity and positivity in their professional speech. Our research supported the idea of Renaud and Cote (2017) that

given the importance of physician-patient communication in the undergraduate curriculum, it is extremely important to assess this competence in different situations and using different methods, especially during clinical rotations, where students can be observed and evaluated with real patients.

5. Conclusions

The general conclusion of the experiment can be formulated as follows: the use of the system of practical classes in English for careers on evidence-based medicine leads to the development of communication competence in foreign medical students. Based on the results of our study, the assertiveness, clarity and positivity are the main components of physician's communication competence. Doctor's communication competence enhanced at English for careers classes is crucial for successful medical professional activity. The 3rd year foreign students have a sufficient level of communication competence, which needs to improve during their study at the university and through continuous lifelong learning. The results of the investigation can be applied to practice for conducting English for

careers classes for foreign students, especially for cultivating the main components of physician's communication competence such as assertiveness, clarity and positivity.

The prospects for further research are the peculiarities of training physicians in European countries, foreign students' adaptation to communication in learning process; learner's mastering professional medical terms and doctor's ethics.

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