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**ASSESSMENT OF GLOBAL COMPETENCE LEVEL AMONG ENGINEERING STUDENTS****T. A. Anoshkova***Kyiv, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"*  
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The article deals with the notion of global competence and its implementation through a foreign language teaching. Taking into account the experience of other countries we study the possibility of improving current education system in order to train globally competent specialists. In the current article the research programs of different international organizations were analyzed in order to define to what extent students from other countries have developed global competence and how they can apply the obtained knowledge and skills to global issues. The article deals with the already existing programs for teaching a foreign language at the technical university of Ukraine and their connection with global competence. On the basis of determined criteria there was conducted a survey among first-year students, sophomores and junior students in order to evaluate their level of global competence and the correspondence of the existing education programs to the determined goals. After the processing and thorough analysis of the receiving data we presented the results of the survey in the form of percentage rating and bar charts. As a result the author proposes possible ways of increasing the level of global competence of young specialists and improving the existing education programs.

**Key words:** global competence; foreign language learning; improving the education system; education program; global issues.

**Introduction.** Today Ukraine is in the center of an international conflict. During the last few years we have faced not only the changes of our political line, important social and economic reforms but also some large-scale migration of Ukrainian population. Migratory movements do not end inside the country. The state migration service of Ukraine has announced about the increase in the number of those who have a desire to move to another country. Alongside with all these processes in our country we can observe the migration crisis in the EU, the increase in number of refugee immigrants throughout the world and a tough policy of the US against Mexican immigrants. As a result, nowadays we deal with the linguistically and culturally diverse society that requires new global approaches to the problems of a modern world, and leads to the upbringing of the globally oriented generation. The important role in this process is given to foreign language learning.

The importance of teaching global competence while training young specialists has already been proved by numerous American and European scholars, among them are B. Hunter, F. Reimers, P. Jonson, J. Jurgens and others. Despite the fact that among native scholars the current topic hasn't become very popular yet, we can find the researches dedicated to global competence in the works of N. Avshenuk, G. Nesen, O. Ovcharuk and Ya. Bondaruk etc.

The **purpose** of the article is to determine the level of global competence among the students of engineering specialties at the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" according to the conducted survey, and to improve the existing education program on the basis of the results obtained.

**Experience of other countries in the global competence implementation into education.** The US was one of the first countries which understood the importance of studying the foreign languages and cultures as far back as 1950s. And at the beginning of the 21<sup>st</sup> century it led to the reforming of the American education system taking into account demands of the modern IT-society [3, c.8]. Among the main motivational statements for the development of global competence through education in the US were: language and cultural competence for an effective diplomacy and international safety; knowledge and experience which are necessary for solving global problems occurring outside the borders of the country; and global skills essential for transglobal connections and trade [7, c.61].

Today the US government donates money for student exchange and professional development programs, and all educational institutions from primary school to colleges and universities form their training programs on the basis of knowledge and skills aimed to develop global competence [2, c.68]. American scholars and teachers proved that in the future globally competent students will be able to function successfully in the multidisciplinary teams, to communicate effectively, to understand the impact of engineering solutions in global and society context, to form their own point of view and accept and respect those of others [1, c.2].

Direct relation of the US and Europe led European countries to the necessity of considering global competence as an integral part of a modern society and implementing it into their own educational systems. Therefore, the Department for International Development of the UK established the cooperation of British schools with schools in Africa, Asia, Latin America and the Caribbean [5, c. 8]. In Sweden they have developed a program "Citizen of the world" where students together with their teachers study those countries which have great importance for the future of their motherland. Cooperation with Chinese and Indian schools aimed to prepare students for the real demands of a modern world, whether this is studying abroad, participation in sustainable development programs or training social, economic and financial responsibility [5, c.8].

A significant role in promoting global competence is played by some Asian countries, especially Japan and China. Japanese government gives its financial support to the universities which provide student exchange programs. In 2011 the federation of business in Japan proposed to implement a program contributing to training globally competent workforce [6, C.702-703]. In India the ancient traditions of non-violence and universal community have become the framework of their international education. The basic principle of national education program in India is the advocacy of national identity and unity as well as the growing awareness of the necessity to reach peace and understanding between nations for the sake of mankind prosperity [4].

Since Ukraine is situated on the crossroads of three parts of the world (Europe, Asia and Africa) we have always understood the importance of foreign language learning. That's why in our country English is studied as a major subject starting from a junior school. However there is still a question if our education program contributes to the development of global competence.

**The procedure of assessment the level of global competence and analysis of the results obtained.** The Programme for International Student Assessment (PISA) together with the Organisation for Economic Co-operation and Development (OECD) and UNESCO aimed to create a universal test that measures the level of global competence of students and the effectiveness of education systems in achieving these goals.

Since this test is designed for the students of different countries, cultures and social layers, its tasks do not include history, math, geography and language questions. All the questions were composed taking into account the definition of the term global competence, proposed by the OECD [8, c.4]. Hence, global competence is considered as the ability to analyze global and intercultural issues critically and from multiple perspectives in order to understand how differences influence the perceptions, judgments and ideas of self and others, and to participate in open, appropriate and effective interactions with other people from different backgrounds on the basis of a mutual respect for human dignity.

Furthermore, the OECD points out the following components of global competence:

- Basic knowledge, including understanding of such global issues as migration processes, poverty, and climate changes etc., studying the world history, other languages and cultures.
- Attitudes and values (self-awareness, respect for cultural otherness, openness towards people from other countries and humanism).

That's why in order to estimate what level of global competence Ukrainian students possess and whether English language course program reaches its goals, it was decided to conduct a survey taking a questionnaire provided by the PISA as an example [8, c.24-40].

Our survey was conducted among first, second and third-year engineering students of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute". All students have a Ukrainian citizenship and study English as a second language.

The university curriculum includes the following English modules:

- The "Introduction to English for General Engineering" credit module for first-year students is part of the training in the humanities, social and economic sciences, and comprises 90 hours. Upon the completion of the module, students will acquire an English language knowledge level that will allow them to participate effectively in various communicative situations and receive information in English. This module for freshmen includes topics of general education, for example, "Ukraine", "Great Britain" and "The USA" which contribute to the development of intercultural competence, openness towards other cultures and self-awareness.

- The "English for General Engineering" credit module for second-year students is part of the training in the humanities, social and economic sciences, and comprises 90 hours. This course is developed to study issues devoted to general engineering topics which help students to improve the understanding of global problems. Among them are the following: protection of the environment, air pollution, development of modern and ecologically-friendly energy sources, nuclear energy hazards and others.

- The "English for Specific Purposes" credit module for third-year students is focused on meeting professional needs and keeping to the standards of training highly qualified, well-educated specialists able to apply the foreign language knowledge and skills for achieving professional communication purposes. Apart from professionally-oriented texts this course includes studying business English. By the end of the credit module students will be able to follow the essentials of reports, presentations, and discussions on study and specialism-related topics, participate in negotiations with foreign business partners, have a job interview and get a job. They will obtain such skills as sociability, competitiveness, resistance to stress and the ability to find an instant solution to the problems.

As we can see from the above mentioned, each credit module covers one of three basic categories using which the global competence level is assessed [8, c.8]. According to the PISA these categories are the following:

1. Knowledge and understanding of global issues;
2. Intercultural knowledge and understanding;
3. Analytical and critical thinking.

Thus, among the questions presented in the PISA questionnaire we have chosen those which from our point of view cover all the listed categories and allow us to assess the level of global competence of our students. Also we have added several general questions which we find necessary for the accuracy of the results:

1. Have you heard of global competence?
2. Do you believe that knowing a second language will help you to find a well-paid job?
3. Are you planning to work abroad after graduation?
4. How often do you travel abroad?

These questions were added in order to find out the ambience of the students, their awareness of global competence, to make sure that they understand the importance of second language learning and to figure out whether they have the opportunity to visit other countries.

A survey has shown that 56% of the participants have never heard of the term “global competence”, other 37% are familiar with the notion but they can't explain what it means. And only 7% of all the respondents points out that they have heard about global competence and can explain what it means.

Ninety-nine percent out of 50 questioned students agree that mastering a foreign language will help them to find a well-paid job and 100% of students consider staying in another country for a few months as a positive experience. Such results reflect great motivation of our students and their awareness of how it is really important to know a second language.

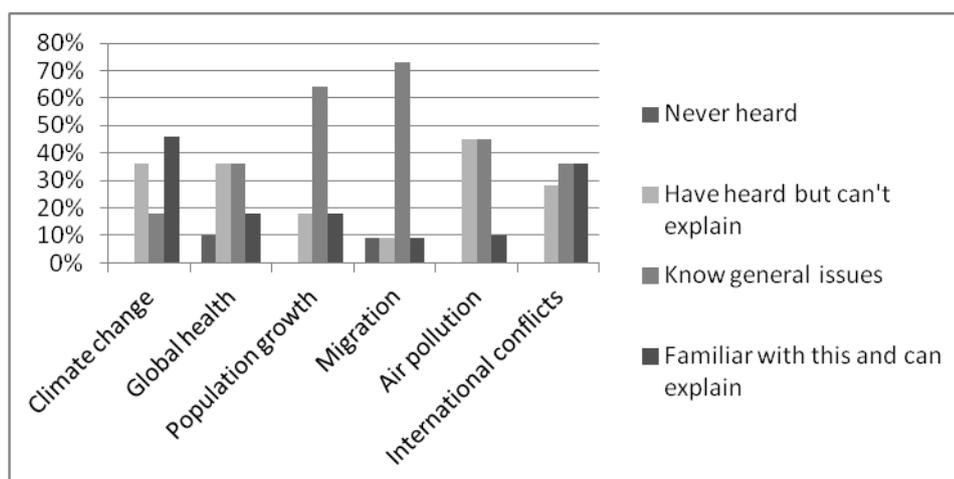
Statistics about those who are going to work abroad after graduation is substantially different. While 91% of all freshmen students are planning to go abroad after graduation, the situation is different for older students. Thus, the number of sophomores who want to work abroad is 63% and of the third-year students is only 46%. We consider this tendency as positive since it means that after two years of studying students start seeing themselves as part of Ukrainian labor market. It will reduce a number of immigrants and contribute to the economic development of our country.

According to the results of the survey about 60% of students have never been abroad. This means that the university has to provide more opportunities for its students to travel abroad either through exchange programs or international conferences and summer camps.

More than 65% of first- and second-year students find it stressful to speak in a foreign language and only in the third year of studies the number has decreased to 40%. Staying in a foreign country the easiest task for students is to say hello and make acquaintance with an unknown person. Also they can deal with ordering a meal at the restaurant or asking for directions. However, making conversation for several minutes and expressing emotions seems much more difficult task for them.

The majority of students tell that they have no difficulties in making new friends with people who come from different country. This demonstrates their openness towards other cultures and sociability. However, when they were asked: “Is what people from other countries think of your behavior important to you?”, half of the respondents gave a negative answer. We regard this as a result of a low level of personal morality and lack of knowledge about culture, traditions and customs of other nations.

The awareness of global issues of a modern world is displayed in the following bar charts:



**Fig. 1.1** General awareness and interest in global issues (1<sup>st</sup> year students)

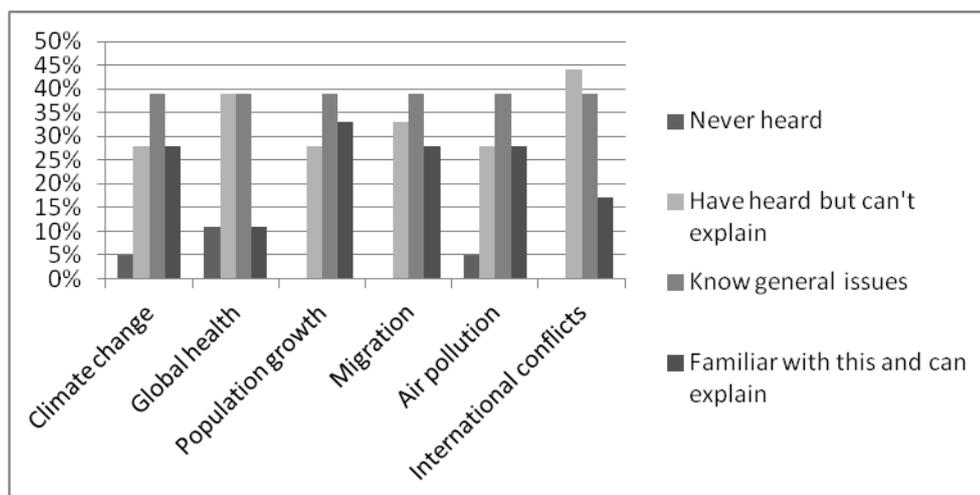


Fig. 1.2 General awareness and interest in global issues (2<sup>nd</sup> year students)

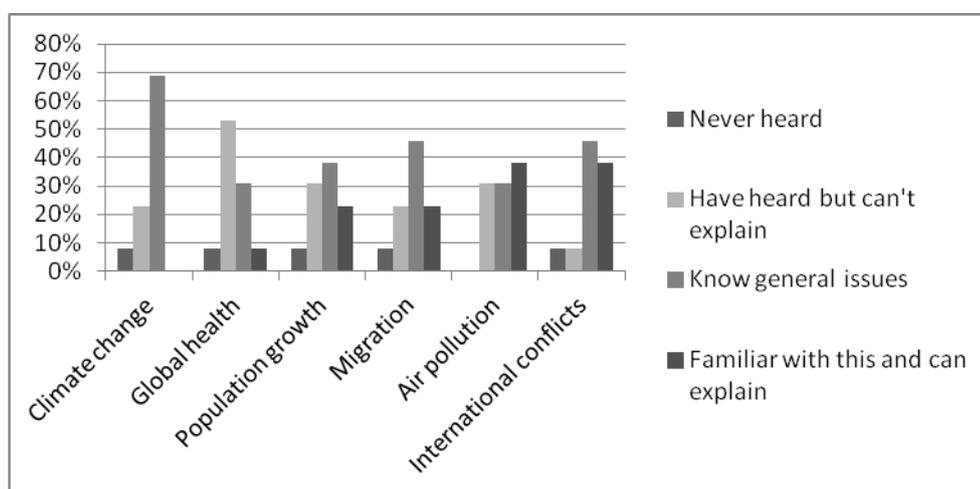


Fig. 1.3 General awareness and interest in global issues (3<sup>rd</sup> year students)

Having analyzed the bar charts we can conclude that the majority of students possess only general knowledge about global issues. As we can see from the Figure 1.2 second-year students do not have enough knowledge in the listed issues. Thus, the goals of the “English for General Engineering” credit module are not achieved. Moreover, according to the results of the survey teachers have to pay more attention to the issue of global health since today it is very important to be informed about contagious diseases and epidemics which we can face in other countries and about new tendencies in the cure of cancer and AIDS.

**Conclusions.** Taking into account experience of European, North American and Asian countries we have come to a conclusion that global competence is a guarantee for a prosperous society and a high-quality education in the country. Hence, globally competent specialists can translate texts, using their knowledge of history and cultural values of the nation. They can express their thoughts not only grammatically correct but pragmatically correct, as well. Their accurate usage of pragmatics is reflected not only in the selection of the words but also in the usage of nonverbal signals. Globally competent individuals can deliver a speech in front of the diverse audience in order to achieve different purposes.

Having conducted a survey among the students of the Igor Sikorsky Kyiv Polytechnic Institute we came to a conclusion that our education system does not meet all the demands of a modern society. Despite the fact that study program of the university is aimed at educating globally competent specialists, not all the goals can be implemented into a real studying process.

Nowadays a global competence issue is only gaining popularity in Ukraine. We should initiate the creation of work groups to develop new methods of global education involving modern technologies, to finance exchange programs for universities on a state level and to learn from other countries’ experience.

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**Т.А. Аношкова. Оцінка рівня глобальної компетентності студентів технічних спеціальностей.** У статті розглядається поняття глобальної компетентності та її впровадження через вивчення іноземної мови. На основі досвіду іноземних країн проаналізовано можливість реформування системи освіти з метою підготовки глобально компетентних спеціалістів. Проаналізовано дослідження міжнародних організацій щодо стратегії оцінювання рівня глобальної компетентності студентів з різних країн. Розглянуті існуючі програми навчання іноземній мові в технічному університеті України та встановлено їх зв'язок з глобальною компетентністю. На основі виділених критеріїв проведено опитування студентів технічних спеціальностей першого, другого та третього років навчання з метою визначення рівня глобальної компетентності та відповідності існуючих навчальних програм встановленим цілям. Після обробки та аналізу отриманих даних, представлені результати опитування у вигляді відсоткових співвідношень та діаграм. Наведено можливі способи підвищення рівня глобальної компетентності майбутніх спеціалістів та реформування існуючих освітніх програм.

**Ключові слова:** глобальна компетентність; вивчення іноземної мови; реформування системи освіти; навчальна програма; глобальні проблеми.

**Т.А. Аношкова. Оценка уровня глобальной компетентности студентов технических специальностей.** В статье рассматривается понятие глобальной компетентности и ее внедрение через изучение иностранного языка. На основе опыта зарубежных стран рассматривается возможность реформирования системы образования с целью подготовки глобально компетентных специалистов. Проанализированы исследования международных организаций касательно стратегии оценивания уровня глобальной компетентности студентов из разных стран. Рассмотрены существующие программы обучения иностранному языку в техническом университете Украины и установлена их связь с глобальной компетентностью. На основе выделенных критериев проведен опрос студентов технических специальностей первого, второго и третьего годов обучения с целью определения их уровня глобальной компетентности и соответствия существующих учебных программ установленным целям. После обработки и анализа полученных данных представлены результаты опроса в виде процентных соотношений и диаграмм. Приведены возможные способы повышения уровня глобальной компетентности будущих специалистов и реформирования существующих образовательных программ.

**Ключевые слова:** глобальная компетентность; изучение иностранного языка; реформирование системы образования; учебная программа; глобальные проблемы.