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11. Belcher, D.D. English for Specific Purposes: Teaching to perceived needs and imagined futures in worlds of work, study, and everyday life / D.D. Belcher // TESOL Quarterly. – 2006 – № 40 (1). – P. 133–156.

12. Council of Europe, Common European Framework of Reference for Languages: Learning, teaching, assessment – Companion volume. – Strasbourg : Council of Europe Publishing, 2020. – 278 p.

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The comparative importance of different foreign languages for the professional development of an engineer

The article examines the importance of language training for a successful career as an engineer, and also compares the importance of the two most common languages of the world (English and Chinese) for a career in engineering. Conclusions are given about the importance of command of the language of international communication for a modern engineer

Keywords: engineer; career; language training; communication; international scientific community; globalization; foreign language.

Today, engineering education is one of the most popular in the world. The field of activity of engineers is multifaceted. Engineering is not only an activity involving the practical application of fundamental technical sciences (mathematics, physics, chemistry), but also a combination of elements from other fields, for example, design, art and architecture. Through engineering science, information is exchanged between other areas of professional activity. For this reason, at present, high demands are placed on an engineer not only as a specialist in their profile, but also as a comprehensively developed personality with a high level of language training. This thesis is confirmed by the era of globalization, including the globalization of the professional sphere, education and the economy, as well as the dynamic development of new technologies in the international scientific and technological space. In these

conditions, in order to increase involvement in the international scientific environment, an engineer needs appropriate language training, that is, a level of proficiency in the language of international communication is necessary, in which a specialist has the opportunity to work with foreign documents, as well as interact with foreign partners.

The language of international communication is the language used for communication by the largest number of people in the world. Based on the 26th issue of the journal «Ethnologue» (the most complete catalog of languages in the world) published in 2023 [10], the most common languages in the world are English and Chinese. In addition to them, the top 5 includes: Hindi, Spanish, French.

But only 2 languages have more than 1 billion people speak – Chinese and English. Approximately 1.5 billion people speak English in the world, the number of Chinese speakers is about 1.1 billion. Compared to the other most common languages, these two languages are significantly ahead in the volume of scientific publications. In this regard, there are disputes about the loss of relevance and obsolescence of the English language obsolescence. There is an increasing tendency to think about replacing English as the language of international communication with Chinese. But is this really the case?

So, English is the native language for 380 million people, more than a billion have learned English. Chinese is the native language for 939 million people, and the number of people who are not native speakers is only about 199 million people. Of course, the number of Chinese-speaking people is still large, but approximately 85 % of Chinese speakers are native speakers.

Of course, Chinese scientists do not lag behind their American colleagues in the number of publications in scientific journals. Moreover, in 2022, China accounted for almost a third of scientific articles published in the most influential international journals [3], which allowed China to surpass the United States for the first time and take first place in the world in this indicator.

But one should pay attention not only to the number of published articles by specialists of a particular country, but also to the language in which they were written. According to the results of a study by Michael Gordin [7], a professor at Princeton University specializing in the history of modern physical sciences, today more than 90 % of indexed articles on natural sciences are published in English.

The next fact about English is widespread using in business sphere. There are approximately 90 % of global arrangements concluded using English [4, P. 585–587]. Also, a plenty of international corporations use English as their major language regardless of region of the residence. There are no doubts that using English at a professional level contributes to increasing the reputation and competitiveness of the company.

For all above reasons, despite of the fact of strengthening Chinese as a world language, it would be wrong to assume that Chinese is going to displace English in the near future.

Today, the most accessible world language is English. But despite of that fact, at the moment there is an insufficient level of using English proficiently around the World. According to the World's largest rating called «The EF English Proficiency Index (EF EPI)» [9], only 11.7 % of countries speak English at a very high level. About 28 % of countries have a high level of English knowledge. The level of rest is average (including Russia), low and very low. Consequently, engineers of most countries suffer from insufficient English proficiency. As a result, there are problems arise:

1) It is difficult to work with foreign partners in order to solve various tasks;

2) Sharing of professional experience with foreign colleagues is complicated;

3) Obtaining relevant information from foreign sources is complicated.

In the era of globalization, incomplete knowledge of the language of international communication imposes very serious restrictions for better career developing of both an engineer and companies.

Good language training (knowledge of English) is an important component for a specialist's activity [1], because it also helps in mastering of technological systems. According to the statistics [8], enterprises may lose 30–32 % of the productivity if the workers and company management don't have enough English skills. This happens for a reason of increased expenses because of correcting mistakes and missing opportunities, for example misunderstanding of foreign specialists, low satisfaction of foreign customers, which could have been reduced to a minimum if management and employers had mastered English to a high level. The described theses confirmed by plenty of corporations, including international ones. For instance, the German company Maxion wheels, the world's largest manufacturer of automobile wheels, was able to increase the productivity by improving English skills of 71 % of employees. The company has branches in 12 countries, including America, Europe and Asia.

Knowledge of English contributes to simplification and standardization of bureaucracy. According to the International Journal of English Language & Teaching skills, about 52 % of international corporations use English as official language [6]. For the reason that English is the language of international business, is necessary for making and reading documentation. For example, engineer need to know English for reading technical documentation and manuals, interacting with foreign colleagues, working by exchange. In addition, as were written before, if employer has a good language training,

it will let to minimize language barrier and mistakes in documentation, which reduces company's costs.

Summing up, even taking into account the strong competition between English and Chinese, there is a fair to assume that English stands as a language of international communication due to its much predominance in business and scientific community. In addition, English is an Indo-European language, so for 3 billion people who speak language from this category, it will be much easier to study English than Chinese, what also influences on English leading position in the world.

For being successful modern engineer today, besides having knowledge of the discipline, there is a need to have a good language training. Language training will allow the engineer to follow the global standards in the scientific field and in the sphere of technology, exchanging professional experience in engineering with foreign colleagues.

Finally, as a consequence of conclusions below, nowadays professional standards of many countries require mandatory knowledge of English. As an example, let us to analyze professional standards of the engineering and technical profile of the Russian Federation [2] for the language competence of an engineer:

There is only wording «English» used as a foreign language. The fact is simply explained by a highest accessibility to learn the language among o other foreign ones. There is a clearly requirement to speak English for working with foreign texts, but there is also a demand to communicate with foreign partners in numbers of areas (Professional standard 1 – Engineer for orientation, navigation and stabilization of aircraft in the rocket and space industry and professional standard 7 – Process Engineer in the field of production of semiconductor devices and integrated circuits).

All in all, Russian educational standards are oriented at providing future engineers with required skills including command of the dominant international language, which place is still and for a foreseeable future will be taken by the English language.

Литература

1. Аксёнова, Н.В. Ментальная модель как инструмент при организации обучения иностранному языку в техническом ВУЗе / Н.В. Аксёнова // Иностранные языки: инновации, перспективы исследования и преподавания : Материалы III Международной научно-практической конференции, Минск, 26–27 марта 2020 года / Редколлегия: Е.А. Пригодич [и др.]. – Минск: Белорусский государственный университет, 2020. – С. 545–551. – EDN GYKPZT.

2. Зачем инженеру иностранный язык? (анализ профессиональных стандартов) // Полякова Л.О. // Современные проблемы науки и образования. –

2015. – № 6. – URL: <https://science-education.ru/ru/article/view?id=23067> (дата обращения: 25.10.2023). – Режим доступа: свободный. – Текст : электронный.

3. Китай обогнал США по публикациям в ведущих международных научных журналах – доклад // СИНЬХУА Новости – 2023. – URL: <https://russian.news.cn/20230920/cbdf2126a859415da6abec11c843e338/c.html> (дата обращения: 20.10.2023). – Режим доступа: свободный. – Текст : электронный.

4. Роль английского языка в различных сферах: торговле, экономике, индустрии, бизнесе, спорте / Е.В. Поддубная, А.С. Белоусова. – Текст : непосредственный // Молодой ученый. – 2017. – № 7 (141). – С. 585–587.

5. Case Study: Maxion Wheels // Voxy – English Language Training Designed for Global Teams – 2023. – URL: https://learn.voxy.com/case-study-maxion-wheels.html?_gl=1*1pcalt*_ga*MTQ4MDc4MTc1Ni4xNjk4NDg4MDAz*_ga_2S35X2FSN3*MTY5ODQ4ODAwMi4xLjEuMTY5ODQ4ODA0Ni4wLjAuMA (дата обращения: 20.10.2023). – Режим доступа: свободный. – Текст : электронный.

6. English is a corporate state / Anusriti Choudhuri // International Journal of English Learning & Teaching Skills – 2019 – 2(2):1196–1207. – URL: <https://www.researchgate.net/publication/348488771> (дата обращения: 29.10.2023). – Режим доступа: свободный. – Текст : электронный.

7. How English became the language of physics / M. Fore // Symmetry – 2023. – URL: https://www.symmetrymagazine.org/article/how-english-became-the-language-of-physics?language_content_entity=und (дата обращения: 30.10.2023). – Режим доступа: свободный. – Текст: электронный.

8. How English fluency improves business creditability, Revenue and Productivity // E. Miller // Linked.in – 2021. – URL: <https://www.linkedin.com/pulse/how-english-fluency-improves-business-credibility-revenue-emma-miller> (дата обращения: 25.10.2023). – Режим доступа: свободный. – Текст : электронный.

9. A Ranking of 111 Countries and Regions by English Skills // EF EPI – 2022. – URL: [ef-epi-2022-english.pdf](https://www.ef.com/efepi/2022-english.pdf) (дата обращения: 30.10.2023). – Режим доступа: свободный. – Текст : электронный.

10. What are the top 200 most spoken languages? // Ethnologue – 2023 – URL: <https://www.ethnologue.com/insights/ethnologue200/> (дата обращения: 25.10.2023). – Режим доступа: свободный. – Текст : электронный.

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