

# THE USE OF FOREIGN LANGUAGE KNOWLEDGE FOR FUTURE ENGINEERS

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## Abstract

The purpose of this paper is to look at the perception of students in their first year of study regarding the use of knowing a foreign language for their field of activity, engineering, which they will be practising in the future. The paper will take into account the tests meant for making up groups of foreign languages at the beginning of the academic year 2021-2022, for a group of students in their first year at the Technical University of Civil Engineering Bucharest, Faculty of Industrial and Agricultural Buildings. The test was meant to test their English language level in order to form two groups of study based on their needs. The paper will look into reasons they believe knowing a foreign language and, especially, English, will help them in their future field of activity. Reasons may include communication with collaborators, getting involved in projects, communicating for the purpose of research, studying abroad, etc. Afterwards, the paper will try to find reasons why students believe that foreign languages knowledge will help them in their future domain of activity. Are these ideas circulating in mass-media or in the education field? Are students receiving various promises of achieving certain skills and possibilities using foreign languages? How realistic are, in fact, these possibilities?

**Keywords:** mentality, values, Romanian culture

## 1. INTRODUCTION

In order to be divided into groups of foreign languages to be studied for the first two academic years, such as English, French, Spanish, and German, students at the Technical University of Civil Engineering Bucharest are asked, if too many opt for the English language seminar, to write an essay in order for the professor to see the general level of the students. Those having a level that is much higher or much lower compared to the majority are often recommended to take another foreign language for study, since those other foreign languages start from beginner's level. These are the rules set up by the professors at the Department of Foreign Languages and Communication in order to form, as much as possible, equal groups of students for foreign languages in order to be easy to work with as far as students' number is concerned. At the end of the two years of study, students that do not hold a certificate such as Cambridge or TOEFL are going to sit for an examination test for the language they have studied. Usually English language seminars start from an intermediate level, B1 and reach level B2 by the end of the two years. In case the students in the English class are advanced, the general level will be higher, or if they are beginners, the level will start from beginners.

The essays testing the level of the first year students discussed here were corrected by the author of the paper. The paper will show the reasons these students give regarding advantages they can gain for their future careers as engineers by knowing the English language. The advantages found by students will be listed, together with details, and also the number of essays mentioning the respective advantage(s) will be shown in order to get a perspective on the general mindset and expectations of these students from their foreign languages seminars, and especially from the English seminar.

The information gathered from these tests can help gain a perspective on the mentality, as well as values, in Romanian culture regarding a future profession and its relationship with knowing English as a foreign language. In turn, this information regarding students' expectations and mindset can

help professors of foreign languages seminars do a needs' analysis for teaching English for specific purposes (or other languages) having in mind what they need with respect to their future profession. The English language seminar should contain materials that are relevant for them, as well as activities which they should find relevant for their expectation regarding their future careers. For example, if students believe they may find English of help to communicate with other engineers belonging to other cultures, then some lessons may focus on dialogues in professional settings.

### **1.1. Theoretical Framework**

The wish for migration in search of work abroad for students in technical universities is large in the case of Romanian students, "the economic factor being the main migration driver", according to Gherheş et al (2020). According to the same researcher paper, "In the academic tradition, mobility is part of the university culture, encouraged and practiced for centuries. The assumption is that a highly skilled, educated person needs to be exposed to a variety of experiences and contexts in order to put his/her abilities to the best use and reach the maximum potential." This describes very well the mindset of Romanian students preparing for the engineering professions. Some students have mentioned, in their essays, that they wish to travel abroad for their studies and for work purposes. They mentioned they would like to have the opportunity to work abroad and to collaborate with international companies having their headquarters abroad, as well as to establish business connections and start project with other engineers from abroad. What is more, Romanian students' wish to live and work permanently abroad has been noted: "In the last decade, more than a fourth (26%) of the Romanians living in Romania expressed a desire to permanently settle abroad if they had the opportunity, the percentage rising in the young population." (Gherheş et al 2020) This wish is present in the mentioning of the opportunities to work abroad if one knows the English language, especially, since it is a global language, and thus engineers could work in any country if English is used by a company.

## **2. METHOD**

Fourty students submitted their essays based on the topic of the way English as a foreign language was going to help them in their future profession as engineers, in October 2021. They were from the Faculty of Industrial and Agricultural Buildings, from first year, series A. The author of this paper had to choose which students to keep in the English language group based on their level. Their papers were given grades from 1 to 10. Based on the grades of the tests, the students were grouped according to levels and grades as follows: 10 students fit in the 9-10 range, 8 students in the 8-9 range, 18 students in the 7-8 range, and 4 students in the 5-6 range.

The present paper will look at details regarding advantages of knowing a foreign language, namely English, in the profession of engineering, which will be presented as a table. The table will be correlated with the theoretical framework presented in 1.1.

## **3. FINDING**

The results to the question regarding the advantages of knowing the English language in the engineering profession discussed in the students' essays are listed below, in Table 1, accompanied by reasons for which students believe that there is a certain advantage. Twelve main advantages could be identified in their essays. Professional communication was identified in 30 out of the total of 40 essays, and seems to be among the main reasons why students believe they could benefit from choosing to study English language for their foreign languages seminars. Among the most often mentioned advantages was also easier adaptation abroad, including easier travelling, due to the possibilities of communication offered by English as a lingua franca. Moreover, 23 essays mention the advantage of being easier to get a job while knowing a foreign language, such as English, since

employers have made this a requirement. The opportunities to work abroad are mentioned by 18 essays, showing that students believe that knowing a foreign language, especially English, is going to open up doors for them regarding jobs abroad. Strongly connected to this aspect is working in an international company, mentioned in 7 essays, which includes the situation where a company can be based abroad, in an English-speaking country, or simply cooperate with partners there. Receiving or asking for a higher salary is mentioned in 6 essays, for those engineers that know a foreign language, preferably an international one, such as English. The opportunities to start working on your own, independently, are not considered by too many students, at least for the time being. Thus, the opportunity to start your own business, considering knowledge of English as a lingua franca an advantage, is only mentioned in 2 essays. Opportunities for remote working is only mentioned by 1 essay, referring to the fact that due to knowledge of English a civil engineer could work as a project manager for an international company, being able to communicate with and coordinate a team. Two students mention their dreams of being able to study abroad, based on international mobility programs. Five essays mention the fact that knowing English could help with English terms being part of various domains of activity, such as programming and civil engineering. Access to entertainment and information in English is mentioned in four essays; this can help in making small talk during events, as it does not seem necessarily related to professional development. One essay also considers the possibility of getting a second job, if needed, as translator or interpreter, if one knows English or other language and holds a certificate or diploma recognized internationally.

**Table 1**

Students' papers mentioning advantages of knowing English with reasons

Knowing English - advantages	Number of essays mentioning it	Reasons
Professional communication	30	<p>English as dominant business language</p> <p>Communication as the key to solving any issue</p> <p>Knowing a common language can help start a project</p> <p>Opportunities to interact with foreign engineers</p> <p>English as a lingua franca, to communicate to professionals of various nationalities</p> <p>Improving productivity – lowering stress levels by communicating with the others</p>
Easier adaptation abroad	26	<p>English as a means of help for social abilities, getting information, understanding different cultures</p> <p>English is an official language in certain countries</p> <p>Easy travelling to English-speaking countries – e.g. you can ask for directions</p> <p>For work purposes or for tourist purposes</p>

Easier to get a job 23

English as the most spoken language in the world

You can be part of a global workforce

Knowing a foreign language is a requirement in getting a job

Easy to get a second job as translator 1

Getting a document showing foreign language skills and level

Access to entertainment and information 4

Top films, books, music, internet content are available in English

American culture is everywhere (movies, commercials)

General culture

Opportunity to work abroad 18

English is an internationally recognized language

Working in an international company 7

The international company may be based in an English-speaking country or have partners there

Improving productivity – successful companies are the ones with employees from all over the world, which can lead to new ideas and improvement of the company

If you collaborate with an international company, you can improve your country's economy

You can claim/ receive a higher salary 6

20-25% higher than your competitors, if English is useful in your work domain

English is helpful in your domain 5

New technical words come from English

Special terms used for projects

Most software programs use English in all existing domains – knowing English becomes a requirement to adapt to the new world and to the new generation

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		Most Construction terms are in English
Opportunities for remote working	1	e.g. you can apply to work as a project manager in the domain of Civil Engineering for a foreign company, which will require you to coordinate teams from all around the world
Opportunities for studying abroad	2	With an Erasmus program Go to North America with Work and Travel program for the summer
Opportunity to start your own business	2	After gaining enough money from being hired by a foreign company Start building a business in Romania and have project requests from other countries

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First of all, we can notice the importance that students give to communication, if we read their essays, whether in a professional or personal context. They believe that knowing English can help the communicate better with people having any native language in their profession, and establishing common ground, as well as with people when they are in the role of tourists asking for directions, for instance. A foreign language is also believe to help in having a second job, that of translator or interpreter. To a less extent, students, at least in this group, are hopeful to claim a higher salary or get a higher salary due to foreign language knowledge, to start their own business, work remotely, study abroad, or work in an international company. The opportunity to work abroad due to knowing English is, however, relatively popular within this group of students. As a result, students look rather reticent towards the possibilities of starting off a business on their own or remote work, having in mind, probably, the current consequences of the COVID-19 pandemic crisis and the possible economic consequences which were talked about in the media (Nicola et al 2020).

Regarding the possibilities of studying abroad, these should be explored to the maximum degree by Romanian universities: “Universities must understand that the international experience is of tremendous importance, as the students with study-abroad experience will have a competitive advantage on the labor market, being more prepared to communicate in foreign languages and more culturally sensitive.” (Momete 2010) Thus, studying abroad can help students gain various skills, regarding their future profession, and they should get any opportunity to do so.

Romanian universities offer well-prepared engineers, with respect to foreign languages proficiency as well: “More than 100 universities in Romania offer qualified engineers, having also very good language skills. The high productivity and creativity of Romanian specialists are important advantages on the world outsourcing market. The cost of labour in the IT sector is low and the quality of work is very good, staff being creative and motivated.” (Boscov & Baltescu 2014) The world market will get Romanian engineers that are highly qualified. Romanian universities prepare engineers well aslo with respect to foreign languages proficiency, which is an advantage compared to other countries’ engineers: “The good knowledge of foreign languages leads to a closer

relationship with Western Europe from the cultural point of view and represents a key advantage in comparison with India, China and Russia.” (Bosco & Baltescu 2014)

Thus, Romanian engineers are well-prepared by universities with respect to foreign language learning. In fact, they start their foreign language studies (of English in particular) since before university level studies, since primary or secondary school. This is visible in the fact that some students, at least those enrolled at the Technical University of Civil Engineering Bucharest, hold international certificates showing their level of knowing the respective language. Students are told that a foreign language can help them in their career and are encouraged to keep studying it, as it can help them with studying or even working, at least for a while, abroad. The field of academic research is an international one, with international communities of researchers that are constantly being created; this is an example of a case where knowing English as a foreign language can directly help a future or actual engineer.

With respect to the teachers’ role in foreign language teaching in non-philological universities, Cately (2011) states that skills should matter more than rules: “Teachers should be ready to assume new roles and develop/facilitate strategic learning, emphasizing communication and technological abilities.” Thus, engineering students should be taught communication skills, specifically related to their domain, and therefore how to use their knowledge of foreign languages in their field of activity. Applying foreign languages to the field of engineering requires a few specialized notions of vocabulary, next to the general knowledge of English grammar, which can be further developed at university level.

Romania may be under the influence of the English language due to the historical situation arising in the late 19th and early 20th century, when “The decline followed by the disintegration of the Ottoman Empire in the 19th century favored the penetration of another superpower in the region of the Black Sea: the British Empire.” (Negrea 2015) As a result, the values and cultural mindset regarding the importance of knowing this foreign language may be the influence of historical circumstances and thus an example of adaptation to the external conditions for the Romanians.

Continuing with Romanian history conditions, “Interest in teaching foreign languages in higher education institutions, with the view of forming specialists that are able to interact globally, has become more and more prominent in Romania, especially after 1989.” (Caciora & Sturza 2018). The year 1989 marks, in Romania, the fall of the Communist regime. This is the time when universities created departments of “teachers of English intending to specialize in the field of English for Specific Purposes” (Caciora & Sturza). Thus, the tradition of teaching English for engineers and other domains dates since 1989 in Romania. Since the tradition dates so far back, it is natural that progress has been made in this direction and that students in Engineering can also be proficient in English as a foreign language.

#### **4. CONCLUSION, DISCUSSION AND RECOMMENDATIONS**

The students’ expectations regarding the study of foreign languages during their first two university academic years are echoes of the mentality and values that circulate in Romanian culture throughout the various levels of the education systems. Students are informed about scholarships in order to study abroad, where they can gain experience for their future domain of activity, or for developing their teamwork or leadership skills, as well as their intercultural communication skills. Collaborations at international level are encouraged, both for students, as well as for professionals. With respect to foreign languages instruction, students are taught to expect to live in a global village, where English is the common language (Modiano 1999). Students are thus taught to adapt to the current society they are living in. They should understand the context of their culture by relating it to the larger context of a global culture. Focus should be placed by teachers on their multilingual communicative competence (Prokhorova 2020).

The students' essays for testing their level of the English language at the beginning of the academic year right before their first year of study suggest the fact that students understand the expectations placed on them in Romania, which include being able to cooperate with other engineers at international level and with international companies. However, working abroad would mean they could stay there permanently and leave Romania, while studying or even working temporarily could help benefit both their careers and the economic situation of their native country. Students seem quite realistic and not very optimistic regarding the opportunities to start their own business, as well as to get a higher salary for knowing English as a foreign language and work remotely. What is more, not many mentioned the possibility of getting a second job as a translator or interpreter, which once again is realistic since the profession of engineer is a time-consuming one. Mention should be made that only two essays mentioned the possibility of studying abroad due to knowing English as a foreign language, meaning that students are getting skeptical about the long-term possibilities of later working abroad and establishing a life there. They could be realistic and wish to start their careers in Romania, where, after all, engineers are needed. Lately, there are rather few students signing up for engineering studies at the Technical University of Civil Engineering Bucharest. The university is trying to attract future students and show them the advantages they can get in their own country by practising the engineering profession here where it is needed.

## 5. RESOURCES

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