

## DEVELOPMENT OF CROSS-CULTURAL COMMUNICATION SKILLS OF ENGINEERING STUDENTS

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**Abstract.** Besides specific profession-related skills, it is also necessary for an engineering specialist to have good cross-cultural communication skills in order to ensure successful business co-operation with international partners, which is of extreme importance in any field of professional activity of a particular engineering specialist due to the global tendencies in today's business. The enquiries among the graduates from the Faculty of Engineering prove it to be true, stating that the English language skills, as well as the ability to communicate well cross-culturally on an international level has helped them manage their own businesses and/or work for certain employers more effectively than they could have worked in case the mentioned skills were not present. Therefore, a task for the educators at the university arises to motivate the students for acquisition of the language and cross-cultural communication skills in the process of studies as well as in extra-curriculum activities, by means of paying attention to the major cultural peculiarities of nations which manifest themselves in completely different styles of management, way of developing engineering products and supervision of engineering processes in business, as well as general attitude towards achievement of business goals.

**Keywords:** cross-cultural communication, the English language, engineering education.

### Introduction

Today many enterprises in Latvia are widening their activities on international level that can ensure higher profit. Before starting to work with international partners, it is necessary to be sure that the business will be successful, so that both the human capital commitment and financial investments are productive.

Successful cross-cultural communication is the base for fruitful international business communication which leads to successful cooperation among the parties involved and achievement of the business results, ensuring satisfaction for all the parties involved.

To ensure positive results in the process of studies and in the professional life of engineering students, cross-cultural communication skills are of vital importance, as the today's business environment is multinational, which involves communication with foreign business partners in foreign languages, being aware of and being able and ready to accept the cultural differences of different other nations.

As the labour market, the economic situation in Latvia and in the world and the professional development and career preconditions in any professional field including the engineering sector demand specialists that are able to communicate well in general in order to ensure appropriate personal professional development, oral and written business correspondence to partners and successful corporate cooperation in any aspect of business relations, cross-cultural competence is one of those that should be useful, if developed during the foreign language study courses of engineering students.

Professional skills alone cannot ensure promotion in work. The future specialists should be ready to understand their peers and react accordingly in compliance with the given situation. They should also be able to form external relationships that help firms strengthen and extend their traditional competences while responding to the demands of globalization, mass customization, enhanced quality and rapid technological change [1].

To ensure strong relationships and successful cooperation among the future engineering specialists, not only professional engineering-related and language skills play a vital role. Similarly general and specific cross-communication skills as such can help ensure the necessary results as well.

Usually people in organizations typically spend over 75 % of their time in an interpersonal situation; thus it is no surprise to find that at the root of a large number of organizational problems is poor communications. Effective communication is an essential component of organizational success whether it is at the interpersonal, intergroup, intragroup, organizational, or external levels [2].

Due to the described reason, if engineering specialists lack communication skills, as well as cross-cultural communication skills for specific situations, lots of problems might arise as regards corporate culture and national culture, as well as business relationships in the particular business sector.

The unwritten rules about how to be a good member of a group are called “culture”. Any culture provides moral standards about how to be an upstanding group member; it defines the group as a “moral circle”. It inspires symbols, heroes, rituals, laws, religions, taboos, and all kinds of practices, but its core is hidden in unconscious values. Any groups are classified based on national, religious, or ethnic boundaries, and also on occupation or academic discipline, on club membership, adored idol, or dress style [3].

In the global and modern world, people can belong to many groups, but to achieve the goals, it is necessary to cooperate with members of other groups carrying other cultures. As regards engineering students, in their professional activity after the graduation from the university they can face the need to be able to communicate also across different organizational cultures, as well as other cultures, but the most important basis (which is related to all kinds of cultures) is awareness and acceptance of national cultures, therefore the cross-cultural competence that involves intercultural understanding of other nations has to be promoted during the studies.

The levels of culture can overlap, but as a rule they are always into each other as well, starting from individual culture, which is a part of different other cultures (Fig. 1).



Fig. 1. Hofstede's levels of culture

National culture, in turn encompasses all other cultures, thus manifesting itself as the core of cultures to be acquired most specifically during the study process of students who plan to relate their professional activity with representatives of different other nations than their own.

Skills in cooperation across cultures are vital for the common survival of any person and specialist in general, but the engineering speciality due to its specific character involves resolution of lots of issues related to communication with people who speak languages other than the particular native language of a particular engineering specialist. In this communication process, not only language skills can ensure the necessary results, cross-cultural understanding can help achieve business results faster and continue the initiated processes more successfully.

Certain aspects of a culture may be learned consciously (e.g., the methods of greeting people), some other differences are learned subconsciously (e.g., the methods of problem solving). Due to the mentioned reason, engineering students within the foreign language study course should be taught certain phrases and methods of business communication as part of the language competence, as well as cultural differences should be analysed as part of the cross-cultural competence, to ensure not only appropriate use of means of language, but also to guarantee that the students are aware of the cultural backgrounds and able to make the appropriate decisions as regards the perception of different cultural characteristics of their foreign partners during the process of cross-cultural communication in their future professional activity.

The building of cultural awareness may not be an easy task, but once accomplished, it definitely helps a job done efficiently in a foreign environment. Discussions and reading about cultures helps build cultural awareness, but opinions presented must be carefully measured and tested [4].

As mentioned above, foreign language teachers should choose appropriate materials and methods for the development of cross-cultural competence of engineering students, as it is quite difficult to develop such skills especially for students whose future profession is not related to humanities. There are lots of materials that can be used during the study process, but the cross-cultural competence is impossible to develop without practice, therefore students are to be motivated to take part in conferences and different other international events, as well as to communicate more with foreigners apart from the study process, so that they can apply their language and cross-cultural knowledge and test it, as the cross-cultural perceptions learned in the study process are not and cannot be appropriate on all occasions and are not typical of all representatives of any particular nation.

All specialists operating globally or operating with foreign partners need not have the same degree of cultural awareness, but as during the study process it is not possible to predict what the level of the particular students international involvement will be, it is necessary to promote the basic cross-cultural knowledge and skills.

The further a specialist moves out from the sole role of doing domestic business, the more he/she needs to understand cultural differences, and the more he/she develops the cross-cultural competence according to the obtained experience [5].

According to the culture-related patterns described above, cross-cultural competence is important for the future engineering specialists. Cross-cultural communications skills have proved to be of importance also to specialists working in the engineering sector, therefore the mentioned competence is developed during the study process of engineering specialists within the professional foreign language study course.

### **Materials and methods**

For proving the need to carry out a research regarding the cross-cultural competence of engineering students and in order to elaborate methods for performing the professional foreign language study course of engineering students that would comprise the development of cross-cultural competence, the methods of theoretical description and assessment of cross-cultural communication theories and cultural background peculiarities have been used. To obtain data, the methods of quantitative research have been used, by assessing the data of the surveys carried out after the graduation of engineering specialists that have attended the foreign language study course without additional added value to the cross-cultural competence, even though some cross-cultural patterns have still been unconsciously taught to them. The opinions of the surveyed graduates revealed the necessity to develop cross-cultural competence and learn information about different national cultures, which justifies the need to include cross-cultural studies in the foreign language study course.

The methods of practical analysis have been used to assess the survey results, indicating to the importance and use of cross-communication skills of engineering students, and provide conclusions regarding how to teach cross-cultural communication skills to engineering students within the foreign language study course.

### **Results and discussion**

By means of a survey revealing the presence of cross-cultural communication competence, the graduates of the Faculty of Engineering of the Latvia University of Agriculture were questioned in order to find out, if the promotion of cross-cultural skills is necessary within the professional foreign language study course of engineering students.

At the same time, the graduates were asked about their opportunities to apply cross-cultural communication skills in their professional activity in the workplaces of their professional field regardless of the involvement of the workplace (organization or enterprise) in international activities, so that objective results are obtained that represent the situation today in Latvia in both organizations/enterprises that work globally and those that work on a national level.

The results showed that the majority of the surveyed graduates of the Faculty of Engineering lack cross-cultural communication skills (Fig. 2).

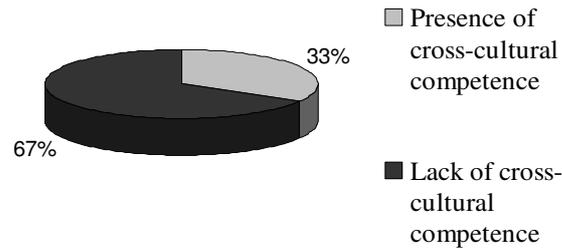


Fig. 2. Cross-cultural competence of graduates of the Faculty of Engineering

Lack of cross-cultural competence testifies to the fact that the graduates of the Faculty of Engineering, the today's engineering specialists, do not have sufficient cross-cultural communication skills, which, in turn, shows that the mentioned graduates are aware of the existence in general of such skills, as well as they are aware that they do not possess them. The results prove that the graduates understand the importance of cross-cultural communication skills and are able to predict situations where they could use them in their future professional activity or where such skills could be used on any other occasion. Similarly, at the same time the results can be interpreted as testifying to the presence of working conditions that involve cross-cultural competence, as without such conditions the graduates would have chosen a response variant that stated that they had not thought about their cross-cultural competence and therefore were not able to respond as regards the presence or lack of their cross-cultural communication skills. In cases where no such conditions are present, the results can be interpreted as testifying to the fact that the graduates without any particular conditions related to international cooperation within their professional activity understand the importance of the mentioned skills and are able to judge whether they possess them or not. As the majority of the graduates state that they lack cross-cultural competence, it means that they understand the definition of cross-cultural competence, as well as they understand that they are cross-culturally not competent enough. Most of the graduates also indicated that they judged from certain situations when they had faced problems because of insufficient cross-cultural communication skills. Such particular survey results also indicate that the professional foreign language study course that was taught to the surveyed graduates during their study process has not developed cross-cultural competence sufficiently enough to be able to deal with cross-cultural issues within the professional activity of the graduates.

The above mentioned allows concluding that cross-cultural communication should be paid more attention to during the professional foreign language study course of engineering students, elaborating specific study aids and methods for more successful culture-related language teaching, as well as acquiring specific peculiarities of different national cultures that the future engineering specialists would most probably have to deal with in future.

As regards the opportunities of the mentioned graduates to apply cross-cultural communication skills in their work, more than a half of the respondents stated that their position in their organization/enterprise involves application of cross-cultural communication skills and they therefore experience a need for cross-cultural competence (Fig. 3).

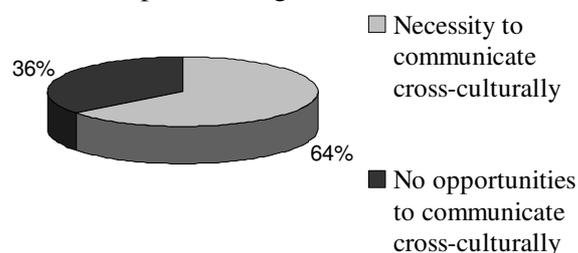


Fig. 3. Need for cross-cultural communication skills of graduates of the Faculty of Engineering

Analysing the results regarding the need for cross-cultural communication skills of the graduates of the Faculty of Engineering, it can be concluded that the cross-cultural communication skills that still have been taught to the graduates during the study process have been of use to them in their professional activity, as the majority of the graduates state that they have had opportunities to apply the mentioned skills in their work.

Most of the graduates state that mainly the cross-cultural competence has been of use when meeting foreign partners and travelling aboard. Some of the graduates state, that cross-cultural communication skills have been useful also when corresponding via e-mails, as they have helped understand certain ideas and actions of the foreign partners. Such answers testify to the fact that these particular graduates have acquired the majority of cross-cultural communication skills themselves, as no such peculiarities have been taught to them during the study process. Similarly the answers prove that the mentioned cross-cultural communication skills need to be taught to engineering students, as international communication is quite an important part of their everyday job. The positive answers also prove that the graduates who have had the opportunity to use cross-cultural communication skills also possessed them, with some exceptions in instances when they faced some problems due to the lack of particular cross-cultural understanding and/or problems regarding perception of other cultures.

The survey results can be interpreted also as proving that, in cases the surveyed graduates had used cross-cultural communication skills (acquired by themselves or in any form of education), they could communicate much better and achieve more successful results. So it can be concluded that, if the respondents were taught specific peculiarities relating to different cultures and cross-cultural communication skills during the professional foreign language study course, the level of their competence and of the competence of other graduates that lack cross-cultural communication skills, as well as the level of their business-related success would be even higher, therefore development of cross-cultural communication competence should be integrated into the foreign language curricula of the engineering students at the Faculty of Engineering.

In order to find out what cross-cultural communication aspects more attention should be paid to when educating engineering students within the foreign language study course, the respondents were asked to name certain skills that they have used of and, to their mind, could use during their professional activity in the engineering sector. The responses mainly included the following aspects:

1. Information about certain countries;
2. Information about characteristics of different particular national cultures;
3. Phrases and actions that are appropriate to use regardless of national culture;
4. Phrases and actions that are not acceptable in certain cultures;
5. Symbols recognized in particular cultures;
6. Values of particular cultures;
7. Ways, methods and peculiarities of conducting business in different cultures, paying the most attention to the biggest cultures;
8. Suggested ways of perceiving other cultures;
9. Assistance in accepting cultural differences;
10. Building awareness of the existence of different cultural backgrounds;
11. Building cultural understanding;
12. Research in culture context and background;
13. Development of skills and gaining of experience necessary to analyze particular situations involving culture clashes;
14. Possibilities of getting rid of cultural barriers;
15. Analysis of culture clusters, paying most attention to national cultures.

The above cross-cultural communication aspects suggested mentioned by the graduates of the Faculty of Engineering are the basic aspects necessary to communicate well cross-culturally, therefore it can be concluded that engineering specialists strongly experience the need for the basic cross-cultural communication skills to be able to do their job successfully, as the majority of work in the engineering sector is done in cooperation with foreign partners and almost any business today in general involves communication on an international level. The mentioned aspects of cross-cultural communication prove that engineering specialists need to know information about certain cultures, they need to be aware of the language and polite behaviour appropriate for different cultures and/or all cultures, as well as they need assistance in building the general understanding of cultures and raising the ability to communicate cross-culturally without any obstacles.

As the results of the research and the analysis show, engineering specialists find cross-cultural communication competence quite important and useful, as well as they state that they experience a

lack of such skills. The above mentioned is a proof for the fact that cross-cultural communication competence and the ability to communicate well with foreign partners should be developed in the students of the Faculty of Engineering of the Latvia University of Agriculture, and it should be gradually integrated in the professional foreign language study course. As regards the methods and content of teaching cross-cultural communication skills to engineering students, the future engineering specialists, and when further elaborating and updating the foreign language study course, the useful and necessary cross-cultural communication aspects mentioned by the graduates should be considered and taken into account. According to the prioritized aspects, the study tasks should mainly be oriented towards acquiring means of language appropriate for communication with representatives of particular national cultures (acquiring symbols, values, rituals) and/or, as far as it is possible, towards acquiring certain means of language that can be used to interact and communicate with representatives of all national cultures.

## Conclusions

Cross-cultural communication competence has turned out to be of importance also to engineering students, as the majority of the graduates of the Faculty of Engineering of the Latvia University of Agriculture have indicated to the lack of the cross-cultural communication skills and cross-cultural communication competence, revealing that they face problems in situations when they have to use such skills in their work.

Most of the surveyed graduates have also indicated that their work requires the use of cross-cultural communication skills, and only a small part of the graduates have had no opportunity to apply their cross-cultural competence (in case they have one) in work-related situations, which means that it would be useful to integrate development of cross-cultural competence into the curricula of the professional foreign language study course of the students of the Faculty of Engineering at the Latvia University of Agriculture.

The surveyed respondents also indicate to the most important aspects of cross-cultural communication, which are summarized as follows: information about certain cultures, appropriate language and polite behaviour in communication with different cultures and/or all cultures, as well as assistance in building the general understanding of cultures and raising the ability to communicate cross-culturally without any communication-related barriers.

To develop cross-cultural communication skills of engineering students, the cross-cultural communication aspects mentioned by the today's working engineering specialists should be considered and taken into account when elaborating the curricula for the foreign language study course of engineering students by means of adapting the teaching content and tasks to cross-cultural environment communication situations and acquiring means of language appropriate for communication with particular national cultures on the basis of awareness of the basic symbols, values and rituals of the particular specific cultures and/or, as far as it is possible, acquiring certain means of language appropriate for interaction and communication with all national cultures.

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