

## PROBLEMS IN PROFESSIONAL ENGLISH WRITING SKILLS DEVELOPMENT FOR STUDENTS OF ENGINEERING SCIENCES

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**Abstract.** Modern engineering education involves the acquisition of competences that build up a basis for competitiveness of young professionals. These competences are normally divided into two major categories: professional and social. The latter group includes self-competence, co-operation and communication activities that serve as a means for interaction of professional knowledge and the target situation that this knowledge is meant to function in. The most fundamental form of social activities nowadays is a foreign language. The vast opportunity for communication in the ICT environment nowadays requires well-developed oral as well as written communication skills; therefore one of the major goals for the foreign language course for engineering students is to develop professional writing skills in order to comply with the target situation requirements. The problems of the current research are: a) to investigate the learning situation in the foreign language classroom within the population of engineering students of the Latvia University of Agriculture; b) find the proof of the necessity of their writing skills development; and c) discover the possibilities to improve these essential skills to the required level. Taking into account the insufficient number of classroom lessons devoted to the acquisition of the foreign language at the university, one of the ways would be to design a specific e-study course titled “English Language Writing for Engineering”, which would cause a certain shift in accents in the existing foreign language programmes. Another way is to design an additional course that would be available as an optional one in the undergraduate study programmes or, otherwise, offered by the lifelong learning centre of the Latvia University of Agriculture.

**Keywords:** professional English, English for Specific Purposes (ESP), English as a foreign language (EFL), students of engineering sciences, writing skills, communication activities.

### Introduction

Language is one of the social competences, alongside with the self-competence and cooperation (after Habermas) that are to be acquired along with the professional ones to form a solid “package” of competences necessary for effective performance in the target situation. Foreign language nowadays plays an essential part in education, especially at its tertiary level, as the contemporary education is aimed at increasing student and young professional mobility within the European Union borders and beyond. It serves as a means of oral and written communication in everyday professional settings when a fresh graduate starts his career, plus acts as an efficient back-up tool during the study process. It assists in learning the content, thus linking various courses across the curriculum together and making the approach to learning more interdisciplinary. Last, but not least, in content-based courses of English for various engineering professions which are being taught at the Latvia University of Agriculture, the content-language approach to the study process facilitates critical literacy and reflexive learning.

### Materials and methods

The present research has three main focus areas. First, it seeks to analyse the learning situation in the ESP classroom of students of engineering at the Latvia University of Agriculture with the purpose to find possible areas of deficiency. Next, on presumption that one of the deficiency areas is the EFL writing skill, trace the root of the problem from the analysis results. Finally, consider the options to tackle these problems and find ways to improve the skills that fall into the category of deficient. In other terms, there are three simple questions – why, what and how to assist students in developing the EFL skills they lack.

Literacy and reflective learning combined, form critical literacy [1] which, in its turn, accompanied by communicative competence [2], helps make the conditions for formation of autonomous learners [3]. Such a learner is able to process the information acquired using the FL receptive skills into an oral or written discourse that carries a message for the target audience – present or remote, real or abstract. This is what to be sought in the ESP course, and this is what the majority of young students lack, as their receptive skills are much better trained than the productive ones. At the tertiary level, however, the ESP course suggests intensive practice of productive skills, writing being

at times dominant: scientific papers, written home assignments, reports and descriptions and other study-related written assignments form a significant block of the EFL course.

Traditionally for students, writing enjoys the bottom position among all the four macroskills in terms of efficiency. "Much of the initial difficulty ... stems from the impersonal and abstract character of writing... Since writing is addressed to absent or imaginary persons, it produces the "situation new and strange..." [3; 4]. However, this is not applicable to dialogical written communication. Modern ICT offer a wide range of facilities that can stimulate the development of communication competence and, as a result, the EFL writing skills through various social media. This type of learning fosters the transformation of monodirectionality of writing into a multidirectional process involving social networking, discussions, microblogging and commenting, chatting, commenting and editing, etc.

The ESP course design – namely its aims and objectives – is normally based on the target situation needs, i.e., on skills and competences the students will need when they start their professional career. It naturally involves the foreign language skills in various aspects, such as communicative competence (in both oral and written form), as well as reading and listening comprehension and a good mastery of field-specific terminology. However, the target situation needs are the so-called 'distant' needs, while there is another type of immediate needs – those of the learning situation. These are language aspects that the students have to manage well in the process of FL acquisition and that will assist to acquire the skills and competences essential for the target situation. These also involve the development of all four macroskills, but the settings are different: FL serves as a tool in the study process itself. Thus, a comprehensive ESP course seeks to help developing the language aspects needed in the learning situation with a purpose of their further development to meet the demands of the target situation.

## Results and discussion

Analysing the learning situation at the Latvia University of Agriculture, the authors noticed that the students of engineering sciences on average do not possess the EFL skills and competences that are sufficient to meet the demands of the learning situation. As it can be seen from further analysis, the major causes for this phenomenon are: uneven EFL knowledge background of the students with relatively high percentage of exam grades lower than required; rather differentiated levels of mastery of single skills – normally writing being the least developed. This pattern is maintained through the entire ESP course duration time, as the course does not suppose any streaming that would allow for more flexibility in the teaching and learning approach. Neither this type of approach can be applied to single deficient skill or competence improvement as the foreign language is taught in an integrated way.

In order to tailor the foreign language course to the needs of the learning situation, one should be aware of the learners' EFL background knowledge. In the Republic of Latvia, the students do not need to pass an entrance exam in FL, since they all pass a comprehensive exam in General English upon finishing secondary school. Actually, to transfer successfully to the tertiary level and study successfully the professional FL course, the student should possess the intermediate to upper-intermediate level of knowledge, i.e., B-C in Latvia or B1-B2 according to the EU classification. The exit level upon completion of the university course of English tends to fluctuate between B1 (an essential minimum) and C1 [5]. Figure 1 below gives an insight into the centralised EFL exam results in secondary schools all across the state in 2010 that totals 22 638 participants. One can notice that most of 2010 school-leavers possess EFL knowledge equal to intermediate (C) and low-intermediate (D), followed at a distance by B – upper-intermediate and E (basic communicative). In application to the study process, D and E levels are not sufficient to start a professional FL course at tertiary level, as the learners lack essential skills and competences in general English to develop further. Referring to EFL writing, there is poor knowledge of grammar and structures, insufficient volume of active vocabulary, unawareness of written communication competence principles, etc.

As one can see from Fig. 1, there are 4.3 % secondary school pupils that scored A level in the exam, with another 19.1 % with B and 29.8 % with C, which is the margin level for tertiary education. Thus, only 53.2 % of all exam participants possess the EFL level that allows them continue education and perform at the necessary level in ESP classroom of any higher education institution.

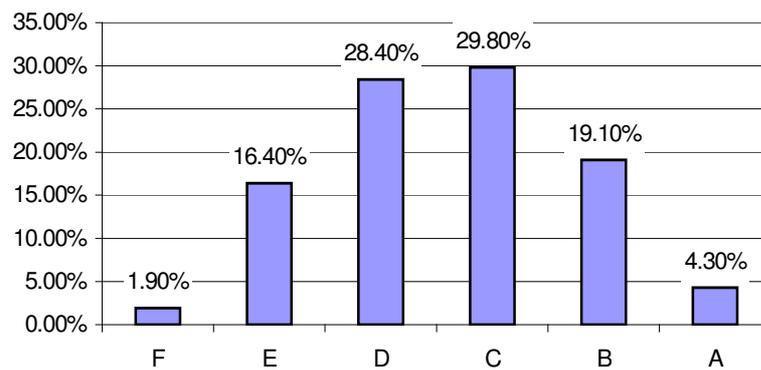


Fig. 1. EFL exam result division by levels [6]

Fig. 1 provides very general information, which, however, is absolutely relevant for the students of the Latvia University of Agriculture, as they represent various types of secondary education establishments (secondary schools, gymnasiums, vocational schools) and have different learning background (rural schools, republican city schools). The EFL exams suggest testing all four language macroskills – reading and listening (receptive), as well as speaking and writing (productive). Although Fig.1 does not offer a more detailed division of the results skill by skill, it is normally very likely that the students score less in productive skill testing compared to receptive one. This is the point where simple language literacy which is enough to complete the exam in General English comes into conflict with reflective learning which is necessary to study the ESP course at tertiary level.

The Latvia University of Agriculture offers study programmes in various engineering fields, e.g., civil engineering, environmental engineering, mechanical engineering, etc. Each of these programmes contains a course of professional English for engineering that takes place during the first and sometimes also the second study years, totalling 4 – 6 credit points (this means that students have two sessions of English per week on average). The course suggests the content-based, integrated skills approach to learning, which means that the macroskills are taught and acquired simultaneously and at the level required by the target and learning situations (i.e., B2-C1). However, as it was mentioned before, the students' mastery differs rather significantly from one macroskill to another, which, taking into account the volume of the ESP course, makes the latter insufficient to achieve serious and even development of all the skills. With regard to the writing skill, it is the most time-consuming classroom activity yet the least developed for the majority of the students. For the former reason, most of written tasks are assigned to be done outside classroom, yet the latter requires more attention to be devoted to the EFL writing strategies that students are unaware of and which will result in the skill development.

Another aspect that makes professional language development less effective is that there is no streaming based on the students' level of foreign language proficiency. In mixed-ability groups it is difficult to implement many classroom activities – individual, pair or group – due to the fact that the teaching materials are normally aimed at a certain level of knowledge and do not allow for much flexibility. As a result, students with higher EFL levels happen to be deprived of the opportunity to exploit their learning capacity to full extent. Meanwhile, lower-level learners struggle hard through the same material and normally need longer time and teacher's help to do the same task. At the end of the course, the exit grades differ as much as they do at the beginning, which also proves to be demotivating for many D and E level students for whom it is difficult to cope with the course contents and demands.

In order to motivate all students, the authors suggest designing more flexible writing tasks that would allow students of different levels use their potential to full extent. One of such ways is to involve the Internet and modern ICT in learning EFL writing, namely, using the electronic course (Moodle) and social media in the study process. Real-life multidirectional communication is not only more motivating than traditional pen-and-paper activities, but also is motivating and saves the classroom time, as these tasks can be performed individually and independently by students at home. This type of tasks allows students communicate with their group mates at their own level of FL and learn from each other. Another solution is aimed at higher level students. As any other web-based type of learning, it should follow certain task-designing principles that make it a quality EFL learning

process. These are: clarity, adequacy, reliability, deep (self-reflexive) learning, individual work, cooperation and variety [7]. To increase their motivation and help them use their EFL knowledge more efficiently, these students can be encouraged to engage themselves in research activities and international student activities: participate in student conferences in English, publish their research papers, take part in student exchange programmes, such as Erasmus. This allows to successfully combine their FL knowledge and skills and the content knowledge they acquire in the study process in a variety of other subjects.

## Conclusions

The research sought to locate the problematic areas in the current learning situation in teaching and learning English for engineering at the Latvia University of Agriculture. The research of the engineering student community at the Latvia University of Agriculture brought forward the following conclusions:

1. The ESP course offered to the students of engineering sciences at the Latvia University of Agriculture has a few points of deficiency. Namely, mixed-ability groups are not only difficult to manage effectively, but they also make it problematic to arrive at the required EFL exit level. Then, learning professional English at the beginning normally facilitates the students' overall performance in other subjects, but the brevity of the course and its place in the curriculum alienates the course from the target situation, i.e., actual work settings when a young professional begins his career a few years later.
2. The students of Latvian schools on average have insufficient level of FL proficiency needed to perform efficiently in the ESP classroom settings. Productive skills tend to be less developed due to lack of such skills and competences as self-reflexive learning, critical thinking, and properly designed target and settings for written communication based tasks.
3. Absence of 'real-life target' for written communication, such as a letter recipient, makes the task abstract and the learner confused and demotivated. To make learning ESP writing more target-oriented and interactive, the tasks need to be designed in a way that the students feel involved in the process and see the feedback. One of such possibilities is to make the ESP writing course web-based, which will not only make it interactive, but also will allow students learn from each other, as well as will save time for other classroom activities other than writing. This would also help the language teacher to choose materials from more than a varied selection and adapt them to the unique learning situation, especially in mixed-ability groups. In student groups with no streaming writing tasks involving use of social media give a wider opportunity for the learners of different levels (especially with lower language competence) to succeed and develop.
4. Last, but not least, the argument is that the web-based course can prove more efficient than the in-class one, as writing requires more time than an integrated ESP course can offer. Students learn in a more relaxed environment and according to the schedule that is more comfortable for them and they get an immediate feedback from either the teacher or peers, which is equally stimulating.

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