

TEACHING STUDENTS OF INFORMATION TECHNOLOGIES – SPECIALTIES ENGLISH WRITING

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Abstract. The paper deals with the problem of professional competence formation in ESP writing, which is especially important with the introduction of the new government standards for higher education. In this paper the vital factors of acquiring knowledge, skills and abilities in English writing for students of IT-specialties are studied. The importance of teaching students writing technical documentation in English is emphasized taking into account the requirements of their educational qualification characteristics and programs. The difficulties which IT-specialists have while writing professional texts in English are described. They are related to a technique of writing – spelling, punctuation skills; the language form – genre of the text, lexis and grammar; the content – compositional skills; the organization of teaching – cooperation and correction of mistakes. The effectiveness of teaching ESP writing can be achieved through the combination of the classroom and the self-study work.

Key words: teaching, English for Specific Purposes, students of IT-specialties, self-study work, ESP writing, technical documentation, Software Requirements Specification.

The paper aims to outline the linguistic needs of future IT specialists. The task of the research paper is to demonstrate the importance of teaching IT-specialties students writing technical documentation in English.

The actuality of teaching English for Specific Purposes writing future IT specialists. The entry of Ukraine into the European educational space and the expansion of international relations encourage society to prepare highly skilled IT specialists who speak English on the professional level. It leads to significant changes in qualification requirements, in pedagogical theory and in teaching practice of technical specialties' students. The main purpose of teaching English for Specific Purposes (ESP) students in universities is to develop communicative competence in four types of activity – speaking, reading, listening and writing. It provides a specialist with the ability to speak foreign language using the language within a social context and also knowledge, skills and characteristics which allow the individual to perform professional activities (ESP, 2005, p. 35-36). In today's society the obtaining of writing skills and abilities is one of the most important requisition for a specialist in any field. It is because English has acquired the status of international communication language (ESP, 2005, p. 1) and the vast majority of international contacts, the amount of which is increasing every year, is made via writing in English. The problems in ESP writing were studied by such foreign famous scientists as A. Brooks, D. Byrne, T. Hedge, J. M. Reid, J. M. Swales, Ch. Tribble, R. B. Axelrod, R. White, D. Slaouti, T. Dudley Evans, I. Badger, J. Morley and by Ukrainian and Russian researches as O. B. Tarnopolsky, T. V. Glazunova, O. V. Pinska, A. E. Boretska, G. F. Krivchykova, E. V. Vasilyeva, I. V. Bezhenar and others. Methods of teaching ESP writing for economic specialties developed: O. B. Tarnopolsky, O. M. Ustyomenko, G. S. Skurativska, N. V. Zinukova, O. P. Beconya,

V. V. Bebyh, T. M. Kameneva and others. Such researchers as T. M. Korzh, M. M. Metolkina, O. S. Synekop improved methods for ESP writing in technical universities. Also the problems in ESP writing at universities were researched by O. B. Tarnopolsky, T. V. Glazunova, O. V. Pinska, M. G. Hets, A. E. Boretska, G. F. Krivchykova, E. V. Vasilyeva, I. V. Bezhenar and others. In particular the problems of ESP writing of the students of IT-specialties studied V. V. Strilez and O. S. Synekop. As part of the project methodology V. V. Strilez developed methods of teaching future programmers ESP writing using distance learning course. The researcher presented a methodical description of the project work, elaborated the methodological principles of the integration and variability, described different typological features of the project and revealed technical and didactic possibilities of distance learning course. O. S. Synekop developed a method of interactive teaching ESP writing students of information security using computer intelligence card, blogs and Wikipedia; improved requirements for the research paper writing. Methodological principles of teaching ESP writing students of IT-specialties of the 1st year designed I. M. Moroz, T. S. Ruzhentseva, I. V. Chirva.

Although the problem of teaching ESP writing holds an important place in a scientific research, it can not be considered completely solved. The foreign methods do not address requirements of the Ukrainian educational process. The textbooks include lack of exercise, aimed at the formation of ESP writing. Insufficiently studied are the issues, the specific conditions, the learning objectives, the mentality of the country, the professional and psychological characteristics of future specialists in certain areas, the learning model. This is confirmed by a survey of teachers and students.

The vital factors of acquiring knowledge, skills and abilities in English writing by students of IT-specialties are:

- writing is an important factor in the development of culture and education, means of information storage, people's communication and intercultural connection, production and materialization of a new knowledge, intellectual enrichment and development, essential condition for the development of person's abstract thinking;
- the role of written communication in the world is increasing as the most international contacts are conducted in writing form;
- work with the computer, without which specialist's modern life is impossible, involves writing;
- academic mobility of students expects training in European universities with the assignments to be done in writing.

According to the reviewed educational qualification characteristics, and educational programs the graduates that acquire speciality in the field of IT must have practical knowledge in ESP within professional topics, including writing communication. The students of IT-specialties have to write reports on professional topics, resume, letter of application, fill in the forms, write articles, abstracts, thesis, prepare professional correspondence, business letters, memos, technical documentation, technical manuals, academic essays. The Graduates in IT sphere have to be able not only to communicate but also to create a technical documentation in English for the developed software, in particular, to write Software Requirements Specifications (SRS).

The educational programs state that IT-graduates must have knowledge in such professional activity aspects: consultation on IT, software creation, data processing, work with databases, searching and processing of electronic texts posted on the Forum of professional societies, professional electronic publications, online workshops, discussing production issues with colleagues, administration, customers on terms as direct communication and communication by means of e-mail, forum, instructions, posts, reports, producing reports, presentations and documents. The research has revealed the importance of such a technical legal documents as SRS in the field of IT.

The above mentioned confirms the needs for students of IT-specialties to be professionals in ESP writing. It stresses the importance of teaching students writing technical documentation in English. The creation of any software starts with the writing and signing between the customer and the developer technical documents. Thus, according to the needs of students of IT-specialties for

their future professional activity such skill as the creation of English technical documentation in accordance with international standards should be added.

For the students' ability to demonstrate listed actions relevant skills should be formed: skills of writing techniques, lexical and grammar skills and skills of using linking words. Following O. B. Tarnopolsky (Tarnopolsky, 2008, p. 58) we believe that the main skills of IT-specialties' students in ESP writing should be the skills to express their own thoughts in full compliance with the genre features of a written document and the sociocultural requirements of English society. The ESP writing is the writing used for professional purposes.

The Bachelor Course Topics for English lessons have professional character. At this stage, the students' professional knowledge is deepened, complex skills in ESP writing are developed. However, IT-specialists have considerable difficulties while writing professional texts in English, according to the conducted surveys of IT companies' employees and students.

The difficulties, the causes of their appearance and the ways to eliminate. Research analysis devoted to teaching ESP writing, questionnaires of teachers and students at IT departments, observations of the educational process made it possible to identify these difficulties arising in future IT professional sphere. The analysis of questionnaires has proved that there are some difficulties in ESP writing. The questionnaires among 120 students and 70 teachers of ESP have been conducted in "Kyiv Polytechnic Institute", National Aviation University and Kharkiv National University of Radioelectronics. The students of IT-specialties have considerable difficulties in ESP writing. They are related with a technique of writing – spelling, punctuation skills; with the language form – genre of the text, lexis and grammar; with the content – compositional skills; with the organization of teaching – cooperation and correction of mistakes. This indicates the insufficient level of professional competence in ESP writing and necessitates the development of teaching methods which facilitate more efficient learning.

To identify the causes of these difficulties English textbooks for students of IT specialties have been analysed by such criteria as the presence of non-communicative, half-communicative and communicative exercises, availability of reference material, genres of writing, use of technologies: A. A. Badan, S. A. Tsarev "English Language: economics and information technology", V. Golzova "English for computer users and programmers", E. A. Malyutyn "English for programmers", D. Demetriades "Information Technology", S. R. Esteras "English for Computer Users", E. H. Glendinning "Oxford English for Information Technology", J. Morley, P. Doyle, I. Pople "University Writing Course", S. Murrel "Information Technology", M. Ibbotson "Engineering", K. Bochner, P. Charls "Oxford English for Computing", P. Master "English grammar and technical writing". The analysis shows that textbooks are often not related to University programs, do not reflect modern methods, do not have enough exercise for writing tasks. Most of the books contain half-communicative and non-communicative exercises for ESP writing. Textbooks include mostly exercises on the formation of general lexical and grammar skills. They do not have theoretical materials and guidelines for writing certain professional texts, writing assignments, do not always meet the needs of IT-specialties' students.

In terms of language and speech material presentation textbooks are not clearly structured, contain no reference, do not include the use of technical means of learning. This causes some difficulties for students of IT specialties. The textbook used for the students of IT-specialties (4th year) is "Oxford English for Information Technology" by E. H. Glendinning (Glendinning, 2002, 222 p.). It is aimed at integrated development of skills in all types of speech activity, it takes into consideration the needs of future professionals, provides relevant informative material. For example, this textbook is the base for teaching students of the Applied Mathematics faculty at the KPI. But it lacks exercises for ESP writing.

The result of the analysis conducted among English textbooks for IT students confirms the necessity to develop techniques for mastering ESP writing. The textbooks for future IT professionals should have a clear professional orientation, take into account the foreign language communication needs of IT specialists, contain intercultural, professional, social and cultural information. Ensuring these tasks in training IT professionals may be provided under an organized

classroom work in conjunction with the self-study work, which takes into consideration the interests of students and aims to develop motivational sphere of autonomy.

Questions of independent self-study activities studied many scientists, including A. M. Aleksyuk, V. I. Andreev, S. I. Archangelskyi, A. E. Belyaeva, G. M. Burdenyuk, B. P. Yesipova, I. P. Zadorozhna, I. O. Zymnya, V. Y. Zyubanova, T. I. Koval, Smith, N. F. Koryakovtseva, N. B. Mayer, L. A. Onufrieva, P. I. Pidkasystyy, G. V. Rogova, F. M. Rabinovich, T. E. Sakharova, Z. I. Slyepkan, M. M. Soldatenko, P. Bimmel, H. Holec, D. Little, W. Littlewood and others. Following I. P. Zadorozhna (Zadorozhna, 2012, p. 112) we determine self-study work as a form of organizing self-studying and learning of students, managed and controlled from outside mediated guidance of a teacher. Depending on the place of the performance, self-study work is divided into classroom and extracurricular. In technical universities the importance of self-study work is increasing. It is mainstreaming the issue of finding ways of effective extracurricular self-study work for future IT professionals in the sphere of ESP writing.

Important questions remain: content of teaching, the needs of students, writing genres, psychological and professional skills of IT specialties' students. All of these questions need further researches.

To determine the content of teaching ESP writing during the final year of a bachelor degree you need to identify the needs of students which are dictated by the peculiarities of their future profession, in our case – the students of IT specialties “Computer Engineering”, “Software Engineering”, “Computer Science”, “Applied mathematics”, “Informatics”. Under the needs of students we understand the most important foreign-language types of the texts they would create during their professional activities.

The SRS as a genre of a written text. The survey has been conducted in the three IT companies of Ukraine, which confirmed that the creation of technical documentation, namely writing SRS, is of great importance. After analysing the definition of the term SRS in the dictionaries and standards in Ukraine and abroad, in this research work, we interpret it as: “Software Requirements Specification – a technical document which specifies the requirements for the software, includes the purpose, objectives, a set of use cases describing system behavior and user interaction with the software and also nonfunctional requirements” (IEEE, 2003, p. 3; Leffingwell, Widrig, 2003, p. 74 ; Pressman, 2005, p. 130; Sulema, 2011, p. 98). The SRS can be considered as a separate genre that has its own linguistic features. Genre is defined as a complex entity, a numerous system of relationships and dependencies. Genres – the functional and stylistic unities, components of the substyle of a functional style, characterized by a certain way of the reality reflection with relevant characteristics and with structural and compositional organization. According to V. Kuznetsov, a scientific and technical substyle of a scientific style is shown in such genres as technical reports, patent descriptions, specifications. V. Vannikov refers the specification to the genres which are combined by the informative functions and which have the status of legal document.

The genre factors include communicative purpose, the content of expression, the author, recipient, subject and form of communication (description, report), standard components of the expression. The specification has a communicative purpose – to meet the needs of the customer, the content of the SRS text – description of the software requirements, the author – SRS developer, recipient – the project manager and the client who ordered a software, the conditions of communication – the project, a form of communication – interpersonal, organized. SRS has standard components of the statements. The typical text of the specification has such features as clarity, specificity, objectivity, impartiality, accuracy. The structural organization of the SRS is reflected in a strict compositional structure, division into sections, subsections, specified by IEEE-830 standard. The structure of the SRS comprises: a title page, a table of contents, the main part (introduction, overall description, specific requirements), notes, appendixes and index.

IT professionals in their careers constantly have to create the SRSs, as no software development starts without the signing of this document between a developer and a customer. But the staff survey of a number of Ukrainian companies showed that experts do not adhere to

international standards of writing specifications and do not have sufficient knowledge of standards for writing specifications in Ukraine and abroad and it prevents mutual understanding with foreign partners. There is lack of literature guidance on developing SRS. Therefore, teaching to write technical documents such as SRS in English is extremely important for students of IT-specialties.

Teaching ESP writing, including SRS is appropriate for final year of a bachelor degree. It can be explained by such factors. We know that the essence of teaching ESP writing future professionals involves the integration of disciplines for professional training of students and special skills in writing in reliance on professional knowledge (ESP, 2005, p. 81). Professional ability to create SRS in mother tongue begins to be formed in students of IT-specialties at the early stage of a Bachelor program while teaching professional disciplines: fundamentals of programming, object-oriented programming, databases, systems programming, computer networks, multimedia technology, corporate design information systems. As the students of IT specialties have got good professional skills to create SRS from professional disciplines and have developed basic English grammar, vocabulary and stylistic skills at the early stages of the bachelor program (course works, projects), the choice of the stage of teaching SRS writing is the final year of a Bachelor degree. It will deepen students' professional knowledge, develop skills of ESP writing and promote the development of personal professional skills.

This is the year of the study that will enable interdisciplinary relationship between professional and English language training in the educational process, through cooperation of teachers of relevant disciplines. While creating SRS in English for their bachelor projects students will be able to receive advice of English teachers and teacher of professional discipline. This situation necessitates the development of methodology of teaching ESP writing, including writing SRS on the final year of a Bachelor degree.

Conclusion. Thus, analysis of current requirements for teaching ESP writing IT specialties, a survey of IT companies' experts, a survey of teachers and students about the difficulties they face while studying English writing showed the prevalence of problems associated with the techniques of writing, linguistic form, the content and form of training. The analysis of the textbooks showed their lack of focus on the formation of professional competence in ESP writing.

The desire of IT students to carry out an independent self-study work in combination with the classroom work and the key role of such an important task as writing SRS for a Bachelor project make English lessons more effective. Received results of a research work have confirmed the urgent need to develop methods of teaching ESP writing future IT professionals on the materials of English SRSs that will meet the current trends in education and information technology.

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