THE USE OF WEB-BASED TASKS AND INTERNET SOURCES TO ENHANCE TEACHING ENGLISH FOR SPECIFIC PURPOSES (ESP)

Svetlana Toropovienė

Vilnius College of Technologies and Design

Abstract. Nowadays, English for Specific Purposes (ESP) becomes as important as other professional subjects taught such as Physics, Mechanics, Graphic Design, Material Science, etc. This paper aims at examining the application of web-based tasks and Internet resources for subject revision in English for Specific Purposes (ESP), motivating students for challenges in their real professional field and drawing conclusions about the application of the suitability of the above-mentioned tools for language learning. The presented ideas are supported by survey results and the observation of students' behaviour during the lectures while applying web-based assignments. Moreover, the article provides a few examples of such activities used in ESP classes, seeks to enhance foreign language professional skills (listening, reading, writing, speaking) of a future modern specialist in an engineering field.

Keywords: Internet sources, web-based tasks, English for Specific Purposes, feedback.

Introduction

The importance of English for Specific Purposes (ESP) in nowadays engineering education can neither be denied nor ignored. The rapid changes in industrial areas and businesses, connected with the rapid development of Information and Communication Technologies (ICT), have caused the need for improvement of communication between the developed and developing countries all over the world. In such a world, the rapid growth of the Internet makes widespread computer-based instruction a reality (Li & Hart 2002). New technologies ought to be assimilated into the curricula and teaching methods. Thus, educational institutions will have to prepare their students for the information world and make effective use of ICT to provide better education (Assche 1998).

Nowadays, the use of ICT in education in general, and language education in particular, has proceeded with the creation of Massive Open Online Courses (MOOCs) and Open Educational Resources (OERs), cloud technologies, and artificial intelligence systems. Technological developments and innovations are also prioritised in the work of the European Commission to empower people with the use of digital technologies (European Commission 2020) and the launch of more EU-funded research and innovation projects, such as the Digital Competences for Language Teachers (DC4LT) (DC4LT Consortium 2019).

The use of information technology in language teaching and learning has undergone a rapid change in the last 30 years. From the advent of Computer Assisted Language Learning (CALL) that reached its peak in the 1980s, the focus has shifted to Technology Enhanced Language Learning (TELL), and today's literature revolves around the integration of Information and Communication Technologies (ICT) in language education (Dudeney and Hockly 2012).

Many researchers have reported the use of computers in ESP, e.g. Robinson (1991). As Paulsen (2001) states, "it is no longer a question of whether to take advantage of these electronic technologies in foreign language instruction, but of how to harness them and guide our students in their use."

According to LeLoup and Ponterio (1998), "There are many aspects that are inherent to the ICT which make it particularly fit for teaching languages, especially ESP." First of all, the World Wide Web is a fabulous treasure of authentic materials for ESP instructors. Foreign language specialists are always looking for authentic materials. Still, their resources are limited when it concerns specific professional fields such as the automotive industry, electronics, automatic electrical equipment, mechanics, etc. Second, such information on the Internet will be up-to-date, so the teacher is no longer forced to use old-fashioned and outdated materials (Web for Schools, n.d. /1998).

Hutchinson & Waters discussed the emergence of ESP and its importance; the role of the ESP teacher; course design; syllabuses; materials; teaching methods and evaluation procedures in their book "English for Specific Purposes". According to the research, focusing on how language is used in real communication means learning English in a specific context pertinent to learners' needs. English for specific purposes should focus on the method of language delivery, that is how learners learn a

language and the different methods of acquisition of a language (Hutchinson T., Waters A. 1987).

In accordance to Deacon, Parkin, and Schneider (2017, 137), "it is now widely accepted that universities have a direct responsibility to prepare students for The Use of Digital Technology in the 21st century, this preparation needs to include digital literacy and competencies".

Consequently, ESP has been developed and become one of the most significant teaching approaches all over the world. The need to integrate technologies in the ESP teaching is more intense nowadays, especially when distance learning became a priority, as well as students need to be engaged in the learning process and build their image as global citizens.

The impetus for the study was personal experience in teaching ESP and the awareness of the challenges ESP teacher can face in teaching process, as well as the value of utilising technology inside and outside the classroom.

The research goal of the article is to investigate students' attitudes towards e-learning while applying web-based tasks and various Internet resources.

Research objectives:
1. The overview of the significance and application of web-based tasks and Internet resources and their suitability for teaching ESP;
2. The analysis of students' survey on the application of web-based tasks and Internet resources in teaching ESP at Vilnius College of Technologies and Design.

Why web-based tasks?

ESP is yet another area of language education that has been affected by nowadays rapid technological innovations and developments. As a matter of fact, ESP combines teaching a subject matter and the English language. Such a combination is highly motivating because students can apply what they learn in their English classes to their main field of study, whether it is the automotive industry, power and electrical engineering, accounting, business management, economics, computer science or tourism. Being able to use the vocabulary and structures that they learn in a meaningful context reinforces what is taught and increases their motivation. This means that the ESP approach enables students to use the English language they know to learn even more English since their interest in their field will motivate them to deepen their professional competences and skills.

Web-based studies refer to the type of learning that uses the Internet as an instructional delivery tool to carry out various learning activities. The first significant factor in the acquisition of

knowledge, both in learning languages and knowledge on speciality is computer literacy. The use of information technology in education involves access to a wide range of up-to-date information with the purpose to develop students' professional competences. The use of computer tools, information sources, the Internet promotes the development of information competence and outlook on the modern life, the formation of professional thinking in a foreign language, increases the motivation to learn a foreign language (Shachakimov M. 2017).

The second important factor in ESP environment is the possession of general language knowledge. Although the majority of ESP teachers are not engineers and technical employees as their students or professionals are, in the field of knowledge, they can design training so that to provide quality and methodological base.

To find the efficient means to teach ESP at the VCTD, the preferred option was to use the Internet, as it is the most efficient tool. Moreover, the main reason for this choice is that it is the endless source of up-to-date information that can be used to encourage and motivate students to develop all four learning skills: reading, writing, listening, speaking.

The Internet is obviously the greatest influencer of our personal life and professional field as well. The Internet helps ESP students to learn in a unique way. It represents the following features: Authenticity, Literacy, Interaction, Vitality and Empowerment (Alexander Chuchalin, Elena Danilova 2005).

Authenticity is very important because language learning is most successful when it takes place in an authentic, meaningful context. The Internet gives students access to vast amounts of authentic material on any topic. It also allows opportunities for authentic communication. ESP should prepare students for the content and tasks to which they will be exposed in their future professional field. Students are allowed to use all appropriate Internet resources, such as online dictionaries, encyclopaedias and terminology reference books and other helpful materials, as presented in Figure 1.

Fig 1. Sites offering relevant reference materials

Literacy: The ability to read, write, communicate, research on the Internet represents important new forms of literacy that became essential in the 21st century.

Interaction is the major means of acquiring a language and gaining fluency. Effective ESP teaching incorporates the development of oral and written communication skills. The Internet provides students with the opportunity to interact 24/7 with native and non-native speakers all over the world.

Vitality: The Internet can provide an element of vitality and motivate students as they communicate in a medium that is flexible, multimodal, continually updating and connected to real life.

Empowerment of the Internet's mastery allows all participants of the teaching/learning process to experience the attractiveness of life-long learning. Students learn efficient searching techniques by using search engines that are required when they need to find something to meet their personal interest or professional needs. It also teaches them a collaboration with others and develops their teamworking skills (Warschauer, M., Shetzer, H. and Meloni, C. 2000).

The ESP learning at VCTD can be called blended, as it combines traditional teaching with IT technologies. The success of such type of learning mostly depends on lecturer's objectives, planning of suitable activities, searching for relevant web sources, his/her creativity.

The key issue for ESP lecturers to involve students of technical engineering field to use English during the lectures in a meaningful way. Some teachers think that access to Internet materials needs to be controlled to prevent students from downloading inappropriate materials and overwhelming themselves with unnecessary information. According to Kavaliauskiene (2003), "Before students acquire some experiences in sorting out information, instructors' guidance in selecting appropriate materials is necessary. Otherwise, learners might be overwhelmed by the amount of information and its linguistic difficulty."

According to Opalka (2002), "Teachers should be aware of certain problems such as accuracy, appropriateness, and appeal (easy to use, interesting to read) and reliability of the information on the web when applying Web sites in the classroom."

The Research Questions

Having reviewed the related literature, there are several issues to be addressed. This study focuses on these questions:

- How do students feel about the deployment of various online learning materials in the ESP study programme?
- What frequency of web-based tasks is suitable for efficient ESP learning practice?
- What is the efficiency of various types of web-based tasks used in ESP teaching?
- What are the students' perceptions of how these tools impact their learning?

The role of ESP at VCTD

Vilnius College of Technologies and Design acknowledges the importance of ESP teaching. To enhance students' knowledge and skills in English, a study programme has been changed, which permits deepening knowledge in the technical field by studying specific technical topics.

Nowadays, ESP teaching is based on the concept that students should learn English by practising scientific tasks that are already familiar to them in their native language. Different studies have revealed that learning language through a specific content is a purposeful way to increase language proficiency.

However, an English teacher cannot be equally professional in linguistics and technical areas, and this is why it was accepted that ESP should be taught by a subject expert and an ESP instructor in an alliance. This model guarantees that an ESP instructor helps with language issues in a language-content dichotomy, while a subject expert delivers the technical content of a course (Master, P. 2000). These two specialists should collaborate closely for better study achievements.

Further, the cooperation of two specialists mentioned above will not be successful and productive, if an ESP instructor has no interest in the engineering area and technology and a subject expert has nothing in common with his/her knowledge of English at an appropriate level. Moreover, to be a good ESP instructor, a language teacher should keep pace with the latest innovations in science and technology by reading, watching and listening to scientific news and podcasts. This brings to light a new paradigm and a new motivation for students to learn English, not as it is, but to learn it to manage different intellectual material in any professional area.

Methodology

The survey participants were Bachelor study cycle first-year students from the Technical Faculty of Vilnius College of Technologies and Design (Automotive Electronics, Automobile Maintenance and Repair, Mechanic Transport Engineering, Electrical Automatic Engineering). Ninety-six full-

time and part-time students were the subjects of this study. The questionnaire survey was conducted in the autumn semester of 2019.

Research methods used:
1) a specially designed open-ended questionnaire to examine students' attitudes to learning while using web-based tasks and various Internet resources;
2) application of web-based tasks and actual performance on the Internet;

The questionnaires had three types of questions: multiple choice questions, closed and open-ended questions. The questionnaire was administered in a paper form.

Feedback from this questionnaire also highlighted some challenges that the students faced, which would be very helpful for future improvement of this assessment criterion.

Results of the Research

Questionnaires filled in by all the 96 students who attended traditional lectures during the autumn semester of 2019 were considered to provide the following analysis. They consisted of various multiple-choice and open-ended questions concerning the knowledge gained, the value of e-learning materials when compared to the coursebook, and the attitude to web-based lectures and application of various Internet resources. The written data of 96 students were analysed using quantitative text analysis.

All the participants considered web-based tasks to be very interesting and stimulating as they focused on many ideas already covered during their lectures. They found the tasks based on authentic materials to be an excellent means of information sharing and language competence development (100% respondents). Most of the students would like to learn ESP both from a coursebook and the Internet-based resources, including authentic professional talks (Table 1).

Table 1. Students' opinion on web-based tasks & coursebook

Statement/question	No.	%
Do you prefer tasks based only on coursebook/textbook material?	-	0
Do you prefer tasks based only on various online materials (articles,	14	15
I would like to learn from both coursebook and online materials	82	85

The next survey question was related to the frequency of web-based tasks or assignments used at lectures. The majority of the respondents (94%) stated that web-based materials should be frequently used during lectures. Only two students (4%) preferred to apply web-based assignments every lecture and one student (2%) wished them to be e-learning as self-study tasks once in a term. The answers are shown in Figure 2, the students themselves specified their preferences.
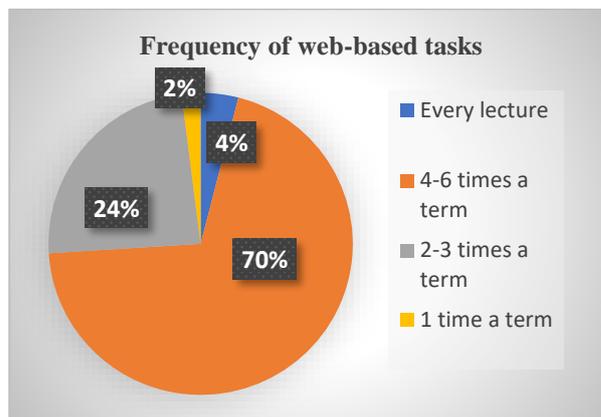

Fig 2. Frequency of web-based tasks

The majority of students indicated that web-based authentic materials and tasks related to their professional field increased interest in learning Technical English. Respondents' replies allow concluding that the most valuable technical language learning activities were the following: technical texts, word search tasks, videos related to the future professional field, the tasks which help to enrich technical vocabulary. The students appreciated very much having been given the opportunity to develop their knowledge of technical vocabulary in a specific context (automotive engineering, automotive electronics, electric energetics, electrical automatics, mechanics). The results are shown in Table 2.

Table 2. Efficiency of Web-based activities

Web-based activities	Very useful	%	Slightly useful	%
Quizzes	24	25	72	75
Text for comprehension	96	100	-	0
Word search (technical vocabulary)	90	94	6	6
Tests	56	56	40	44
Discussions in forums or chat rooms related to the professional field	11	12	85	88

Web-based activities	Very useful	%	Slightly useful	%
Videos related to professional field	96	100	-	0
Different tasks with technical terminology	86	89	10	11
Web sites for reports, presentations, essays with useful guidelines, tips and rules.	47	49	49	51

The activities for ESP classes are intended to develop teamwork skills. By working in small teams, students learn to be responsible for decisions made, determined and supportive. All these features are essential for specialists in the engineering field. Another advantage to be obtained from computer-mediated communication is that it increases computer literacy, as students learn keyboarding and net-surfing skills. It teaches them to effectively use search engines, sort information, brainstorm, discuss up-to-date issues and negotiate solutions efficiently.

Internet resources are being combined to create different Web-based tasks and enhance all types of language skills, such as reading, writing, listening and speaking. Keeping in mind that about 67% of all information comes through the eyesight, Internet resources are being searched that not only reveal the required content but also serve as substantial visual aids to increase the quality and quantity of understanding for memorisation, as shown in Figure 3.
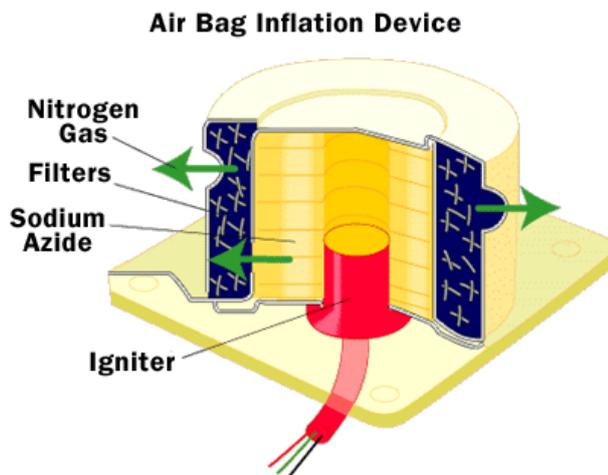

Fig 3. The inflation system with a solid propellant and an igniter

This is a process-oriented approach, and it helps to activate strategies for learning (when they do or see, they understand). For example, students use visual aids to understand how the inflation system of an airbag reacts to produce nitrogen gas open for usage on https://auto.howstuffworks.com/car-

driving-safety/safety-regulatory-devices/airbag1.htm Students can visualise how hot blasts of the nitrogen inflate the airbag and have a better understanding of how an airbag is inflated, as shown in Figure 4.
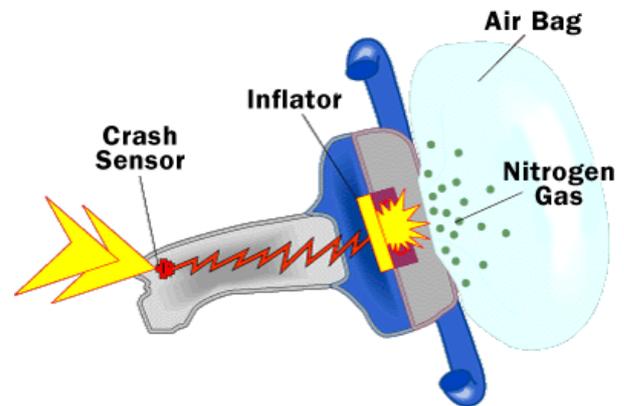

Fig. 4. The airbag and inflation system stored in the steering wheel

By using these types of resources in the classroom, students are helped to gain the necessary content depth right to the core of a phenomenon, process or interactions. As far as it is presented and described in authentic language, it also teaches students the language simultaneously. ESP turns into a means, a tool that can be utilised to solve or further understand something. Such language application motivates students to learn English by overcoming the psychological barrier to deal with a foreign language.

The VCTD constantly involves its students in projects that are performed either individually or in small teams as creative workshops, where they are assigned to investigate different sites, analyse data, prepare PPTs and write the reports concerning existing engineering studies. The report is presented in the auditorium orally using PowerPoint.

An example of how the VCTD incorporates web-based assignment into ESP teaching is presented below.

ACTIVITY TITLE: Robotics

SUBJECT AREAS: Electronic and Mechanical Engineering

YOUR INVESTIGATION: Your employer has read recently in one scientific journal several articles about artificial intelligence. As your corporation will participate in the exhibition LITEXPO 2028, he has some ideas for a new project in the robotics field. He wrote you a letter to find out your opinion and attached a few articles as well. He asks you several questions and expects your reply. Moreover, he asked you to make a PowerPoint presentation for an annual meeting about artificial intelligence or robots.

Give your reply to your employer. (Before you reply, learn how to write formal letters (http://www.nvtc.ee/eoppe/Varkki/layout/rules_for_writing_formal_letters.html)

Read a few articles about robotics:
1. How Robots work (https://science.howstuffworks.com/robot.htm)
2. How Robotic Surgery will work (https://health.howstuffworks.com/medicine/modern-technology/robotic-surgery.htm)
3. How Robot Armies will work (https://science.howstuffworks.com/robot-armies.htm)
4. Will Robots change us? (https://science.howstuffworks.com/robots-change-us.htm)
5. Read the following tips for successful presentations, suggested in Moodle: http://emokymai.vtdko.lt/course/view.php?id=773

By completing the task, students learn how to scam material, sort and analyse the information they are dealing with. They learn to activate their logic and creative thinking because they are supposed to find out everything about artificial intelligence and make a PowerPoint presentation for the future exhibition LITEXPO 2028, which will definitely help promote their further professional career.

Students gain much information about recent great scientific inventions and further develop their basic knowledge. Additionally, students learn how to write formal letters and make successful PowerPoint presentations. All these objectives are achieved in such an activity format, and there is only one main site for thorough investigation: www.howstuffworks.com

As to students' attitudes, they reported some drawbacks in learning through the Web sites, e.g. slow uploading of the Internet or bad connection, lack of computer skills, and inability to evaluate the information they found, which is basically considered a reading comprehension problem.

The use of web-based learning tasks and internet sources in ESP was also expressed in other research studies in different educational contexts (M.-A. Storey B., Phillips M., Maczewski M., Wang 2002; Zarlina Mohd Zamaria*, Airil Haimi Mohd Adnana &b, Sheema Liza Idrisa and Johana Yusofa

2011; Vilhelmina Vaičiūnienė, Daiva Užpalienė 2010 / 2012).

Conclusions

Arranging effective ESP teaching is a serious and long-time task for engineering education institutions. Learning ESP should be based on various technical and authentic content. Only then will it prepare students for tackling professional problems in their real life.

By using the Internet as a learning tool, students can develop their personal features, professional knowledge that are extremely important for modern engineers. By implementing Web-based activities, ESP teachers may reach three goals:
1. Develop knowledge and skills in ESP; ·
2. Revise professional topics that they have learned in their native language; ·
3. Motivate students for life-long learning.

Although the Internet helps make ESP lectures more creative and interesting, it also demands new ways of organising the teaching process, and sometimes it could seem to be challenging and time-consuming. According to Fazeli (2012), little access, high cost, low speed, lack of downloading skills, and too much time spent are the main limitations and problems learners encounter. VCTD students noticed the same issues in their web-based studies which could influence the quality of their outcomes and learning achievements.

By incorporating an e-learning component into a language course which is based on authentic materials, it helps to provide learners with vast opportunities for developing various language skills, speaking, listening, writing and understanding. The Internet is quite a complex phenomenon which influences human lives and activities. Certainly, it can be concluded that the integration of the Internet is a big step in the efficient ESP teaching process.

Even though there are ESP practitioners who use technologies in their teaching successfully, more research is needed to identify the impact of technological innovations and developments, and various internet materials used for efficient ESP teaching.

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ŽINIATINKLIU PAREMTŲ UŽDUOČIŲ IR INTERNETINIŲ ŠALTINIŲ NAUDOJIMAS, SIEKIANT PAGERINTI ANGLŲ KALBOS MOKYMĄ PROFESINIAIS TIKSLAIS

Santrauka

Šiuo metu anglų kalba, dėstoma konkretiems tikslams pasiekti (ESP), tampa tokia pat svarbi kaip ir kiti dėstomi profesiniai dalykai, pavyzdžiui, fizika, mechanika, grafinis dizainas, medžiagų mokslas ir kt. Šio straipsnio tikslas – išnagrinėti žiniatinkliu grindžiamų užduočių, interneto išteklių taikymą ir jų efektyvumą tikslinės techninės kalbos (ESP) mokymuisi bei motyvuoti studentus gilinti profesines žinias. Apklausų rezultatai ir studentų elgesio stebėjimas per paskaitas patvirtina straipsnyje pateiktas idėjas, jog žiniatinkliu paremtų užduočių ir įvairių internetinių šaltinių įvairovė ir taikymas skatina studentų užsienio kalbos mokymąsi ir turi svarią įtaką geresniems mokymosi rezultatams pasiekti. Be to, straipsnyje pateikiamos kelios veiklos (užduotys), kurios sustiprina šiuolaikinių specialistų profesinės anglų kalbos įgūdžius (supratimą, skaitymą, rašymą, kalbėjimą) inžinerijos srityje.

Reikšminiai žodžiai: interneto šaltiniai, internetinės užduotys, anglų kalba specialiems tikslams, atsiliepimai.

Information about the author

Svetlana Toropovienė. Lecturer at Vilnius College of Technologies and Design. Research interests: comparative linguistics, language teaching methodology.
E-mail: storopoviene@gmail.com; s.toropoviene@vtdko.lt