Incorporating ICT for Authentic Materials Application in English for Specific Purposes Classroom at Higher Education Institutions

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We are living in a world of advanced technology and most learners are exposed to ICT-based classrooms, where technology integration in the learning process serves as one of the hottest buzzwords in education all around the world. Nowadays, especially after the outbreak of COVID-19, technology integration has become not only a recommended, but also an inevitable way of running any academic process, including teaching English as a Foreign Language (EFL) and English for Specific Purposes (ESP). The presented article is an attempt to once more emphasise the importance of integrating technologies in teaching ESP at the level of tertiary education in Georgia for effective usage of authentic materials – TED talks, live stream, etc. – in the classroom, particularly while teaching ESP, and to prove its significance on the basis of the survey whose respondents were ESP specialists. A conclusion has been made that application of ICT in teaching/learning ESP is the most contemporary approach, which increases student motivation, engagement, autonomy, and language skills level. This happens due to the authentic nature of materials. The article recommends to increase the ICT use in ESP classes, to make it more various by materials and methods of teaching.

Keywords: information and communications technology (ICT), English for specific purposes (ESP), authentic materials, learner autonomy, engagement, language skills

Introduction

Recently, educational technologies have become a part of our daily lives, especially after announcing the COVID-19 outbreak as a pandemic by the World Health Organisation on March 12, 2020 World Health Organisation, 2020). This resulted in taking urgent measures, not only in the areas of primary vital importance, but also in the life of academia, revision, and

adaptation of English for specific purposes (ESP) courses, in order to meet the needs of online teaching. Compared to teaching general English (GE), teaching ESP has been relatively conservative, with a stress on terminology, its definitions, and translation. Consequently, ESP teaching before the shift of the whole educational systems to online regime applied ICT less than GE teaching.

The COVID-19 pandemic and the lockdown in spring 2020 resulted in obliging the instructors and learners to fully switch to an entirely ICT-based learning environment. In a globally shared new reality, EFL instructors started to share and exchange their approaches to the most effective on-line teaching platforms (Zoom, Cisco Webex, social media platforms, etc.), and did their best in order to timely respond to the challenge of all the mankind, i.e., succeeding in mandatory integration of technology in their learning process within the shortest ever terms.

As for the EFL teaching world, where technology has always, and especially since the 1960's, been present earlier than in any other academic field, integration of technology in ESP classrooms has mostly been present while demonstrating authentic materials, i.e. news, live recordings, TED talks and videos, this is indeed a normal language practice in continuous development-oriented countries, among them Georgia, where technology has been widely applied and integrated into EFL/ESP classroom, not only at higher educational institutions (HEIs), but also at secondary and primary educational institutions as well (Al-Kamel & Chouthaiwale, 2019; Basilaia & Kvavadze, 2020). A great number of teacher training programmes, international scientific and practical conferences, forums and workshops was organised by international (British Council, International House, IATEFL, etc.), as well as local organisations (e.g., ETAG – English Language Teachers' Association of Georgia). They were held both virtually and (where possible) on-site or in a hybrid regime, and have greatly contributed to introducing and practicing internationally recognised and approbated standards of ESP classrooms through an effective usage of technologies in real-life situations and daily encounters with our target audience at HEI in Georgia. However, some teacher training programmes seldom offered training on usage of ICT (to say nothing of teachers of elder generations who have not taken part in any ICT training programmes), which resulted in the failure of transition to online teaching and once again highlighted the necessity for training teachers in order to effectively incorporate ICT into their teaching both in a real and (inevitably) in an online classroom.

Literature Review

Authentic Materials in ESP and ICT

Nunan and Millet (1995) define authentic materials as those which were not created for language learners. They illustrate how native speakers use

English naturally. Recently, authentic materials have become an invaluable resource for not only EFL, but also ESP classrooms. One of the words that have been creeping into English language teaching in the past few years is 'authentic.' It has a kind of magic ring to it: who, after all, would want to be 'inauthentic'?

The attribute 'authentic' may be applied to language and texts that come from real life instead of course-book writer-written educational texts. It may also be applied to activities which occur in everyday communication (instead of 'retell/translate the text' tasks and tests that are only used in the classroom) (Gilmore, 2007; Rogers & Medley, 1988). ESP teachers and students are naturally attracted to authentic materials, such as written texts and recorded videos, which have not been produced for the purpose of language learning, as well as oral materials, such as TED talks, recordings, shows, stand-up comedy programmes, emails, and blogs. The very finding that you are able to read something designed for a native speaker is motivating, as is developing strategies to deal with a 'real-life' situation in an effective way and to have a proper understanding of them. Also, authentic materials provide ESP learners with up-to-date information available in the field, as textbooks are unable to catch up with the changes due to the long writing, reviewing and publishing process.

Both teachers and students agree that authentic materials lead the class to real-life language usage and, in general, make ESP learning process more meaningful and engaging for the learners. The availability of a great variety of authentic materials through ICT is both challenging and beneficial for ESP teachers, since they need to pick the ones which would meet their learners' needs and expectations and, of course, then decide upon the form of integrating them into the ESP classroom. Meanwhile, authentic materials in technology-based ESP education indeed boost learner autonomy and a constructive learning process (Bielousova, 2017).

The authentic materials available through ICT (texts, video and listening materials) can offer much more variety (by topics, difficulty level and genres: field news, conference/journal papers, theses) than any book or even library. By using effective keywords, ESP students and teachers can find materials, appropriate for their needs and interests (Vaičiūnienė & Užpalienė, 2010).

ICT Application and Motivation in ESP

English for Specific Purposes (ESP) is characterised on the one hand by a greater than GE functionality and corresponding instrumental motivation (Fiorito, 2006; González Ardeo, 2016; Hutchinson & Waters, 1987); on the other hand, it is usually written in a dry academic/professional language, packed with information mostly well known to the students and unemotional by nature, which sometimes leads students to boredom (Deveci, 2016).

One of the most challenging tasks faced in ESP education is how to boost learners interest on the searched topics through using authentic materials and thus motivate them for better learning of ESP (Zooharian, 2015). In this regard, the materials derived from real-life experience should reflect a real language and finally contribute to an effective learning process. These materials may also contain little professional 'discoveries' for tertiary education students, as the new types of authentic materials available on the Internet contain a lot of novelties in the field of studies. ESP teachers indeed have a large amount of the materials available to be integrated into the classroom and to develop the most effective strategies for dealing with real language. Easily accessible websites, special interest groups (SIGs) and blogs can assist the learner to search for the most appropriate and up-to-date task-based materials applicable to their field of knowledge (Torregrosa Benavent & Sánchez-Reyes Peñamaría, 2011).

An Internet search provides teachers with unlimited resources in the frame of profession-based and specific topics. Hence, online interactions between ESP teachers and learners (e.g., teacher searching for sites on specific themes, making up questions, preparing online posts for students, etc.) can successfully replace printed authentic materials such as newspaper articles, brochures, conference abstracts and proceedings brought into the classroom to make it livelier. ICT serves as the most effective means for getting familiar with computer-based information (e.g. TV and radio interviews, the news, video clips, advertising, TV copies on YouTube, podcasts, TEDx talks, broadcasts, etc.). The Internet nowadays serves as the most frequently and constantly updated source of information, being visually more stimulating and interactive. Hence, the above-mentioned authentic materials keep students abreast about recent developments in the world, having which serves an educational function.

ICT and ESP Communication

Out of the above-listed great variety of authentic materials, while considering the most effective ways of their integration into the ESP classroom, technologies have always represented one of the most commonly used forms. Technology has always played a crucial role in ESP education due to two different reasons. Primarily, ICT serves as a tool assisting in the traditional form of foreign language acquisition and secondly, it represents a means for establishing new forms of communication and connection with the learners. All fields of ESP education, being basically based on meeting the specific needs of the learners related to their major specialty, have actually been influenced by the ongoing developments existing in the field of technology. ICT has been actively used in ESP classes in order to create the context for communication with oral, literate, and visual models of the discourse.

This includes synchronous forms of discourse, e.g., chatting (an interaction between the participants within the same time frame), asynchronous forms of the discourse (emails, blogs, forums, networking sites like Facebook and LinkedIn, etc.). But the problems remain in choosing the most effective and needs-oriented types of technologies in order to positively affect the achievement of the goals set for the particular ESP classroom. Hence, the decision about the right choice of technologies can be linked to more conventional decisions taken towards the aims and objectives set within the curriculum. While selecting the aims and objectives of the curriculum, ESP teachers have always depended on assessing learners' particular needs and constraints. Hyland also argued about the beginning of the ESP curriculum with an immediate assessment of the learners' needs (Hyland, 2002).

ICT and Application of Tasks in ESP Teaching
Córdoba Cubillo and Navas Brenes (2009) describe how task-based teaching can be applied via ICT while teaching ESP, which include pre-task, while-task and post-task stages. Pre-task can be done by the teacher (search of materials online), while-task can be done on social nets by students in pairs and group, and post-task can be fulfilled online on such platforms as Zoom, Google Meet, Teams, etc.

ICT and Developing Language Skills
Technologies can be applied across all types of ESP classrooms. However, each technology has, to a certain extent, created its own norms and values for language usage, from which some had also influenced language usage in face-to-face circumstances. Hence, being aware of the character of this language is of utmost importance for ESP teachers, who should engage their students in these types of technologies responding to their needs of using English, often called as Lingua Franca under ICT-based circumstances. The choice of particular ICT to be used requires making a comparison between the types of relationships one is engaged in, and the character of the language. As technologies have become an inevitable part of ESP education, serving as an instrument for language acquisition, a place for obtaining different authentic materials and also a platform for publishing and sharing work, its impact and importance have been even more complex and controversial together with all above-listed factors (Bajcsy, 2002; Warschauer & Meskill, 2000). All language skills (listening, speaking, reading, and writing) can be developed via ICT. While it is quite obvious that listening and reading skills can be developed through ICT application, as there are abundant authentic listening and reading materials on the Internet (the tasks based on them may be developed both by teachers and student) (Filiçkaya,

2018; Roig-Vila & Santiago, 2014), the development of speaking and writing skills is less obvious. Kuppuraj (2017) states that speaking skills based on listening and reading materials from the Internet are more motivating for EFL learners, especially if they have chosen the materials. Besides, ESP students can orally communicate via Facebook voice Messenger, Whatsapp and other platforms which enable oral communication (the communication can be with both specialty teachers and group-mates, and with international members of relevant special interest groups). Analogously, writing skills can be improved by applying e-mail and messenger for written communication with specialty teachers and group-mates and with international members of relevant special interest groups.

ICT and Learner Autonomy in ESP Teaching

Radosavlevikj & Hajrullai (2019) mention that Learner Management Systems (LMS) help improve the learning process and make it quite autonomous. These systems enable students to plan their learning, carry it out and perform self-assessment. Students can also improve the quality of teaching by being engaged in curriculum, course, and lecturer assessment.

Therefore, ICT application is indispensable in education in extreme situations, such as a pandemic. In a normal situation it also offers a great number of advantages. To teach ESP in a motivating way is easier with ICT, as it is various and up-to-date, enables taking student preferences into consideration, permits in-class and out-of-class learning, provides authentic materials, encourages learner autonomy, supports task-based teaching. Concerning language learning *per se* and the development of communicate skills, ICT also creates better conditions of ESP learning and teaching.

Research Method

For the purposes of objectivity of results, quantitative research method was applied. A small-scale survey research (the applied tool – a questionnaire developed by the researchers based on the literature analysis) was held. The questionnaire format was a 5-point Likert scale – from 1 – completely disagree to 5 – completely agree. The reliability of the questionnaire was assessed by 30 university teachers of ESP (i.e., a group, analogous to the further research participants), not taking part in the research itself by test-retest procedure. They were English teachers of English, members of Special Interest Groups of ESP at the IATEFL. They were given the questionnaire twice, with a short (a couple of minutes) break, to see the consistency of their answers. Initially there were 8 items, however, finally 6 were left, as the other two were either synonymous or antonymous to the given items, in order to see whether the assessments were given meaningfully and not mechanically. Due to this piloting it became possible to see that the re-

Table 1 Defining the Reliability of the Questionnaire (Cronbach's Alpha)

Item	(1)	(2)
1. ICT application for ESP education has become one of the major issues of contemporary EFL education.	3.80	3.81
2. The use of technology plays a crucial role in increasing student motivation for ESP teaching/learning through presenting authentic materials.	4.01	4.01
3. Technology undertakes a significant function of the authentic materials in ESP classroom.	4.12	4.10
4. ICT tools are the most effective means to encourage ESP learners to become more autonomous and responsible for their own learning.	3.75	3.78
5 (and 5a; synonymous). Web-based learning environment in ESP classroom has a great potential to support student application of task-based authentic materials (e.g., TED-talks, broadcasts) and to enhance their learning outcomes	4.00	4.20
6 and 6a (antonymous). ICT plays a key role in developing language skills and promoting different types of interaction that enhance learning, and, in turn, lead to increased student motivation in the subject matter and ESP language proficiency and outside world through presenting authentic materials in ESP classroom.	3.87	3.87

Notes Column headings are as follows: (1) variable 1: first mean results, (2) variable 2: second mean results. Cronbach's alpha = 0.926.

spondents clearly understand the suggested items. Table 1 below shows the obtained results.

The calculations were done with SPSS-24 software. They demonstrated that Cronbach's alpha of the two variables (two measurements done with the Likert scale) equals 0.926 or the correlation between the results of both measurements is very high (close to 1). This means that the questionnaire is reliable and can be used in this and other researches. As for the content validity of the questionnaire, it was assessed by three international experts in the field and, as result, a minor modification of formulation of items took place.

The link to the questionnaire was uploaded to social networks for a month. Therefore, convenience sampling was applied, due to the time limitations of the research. Thus, the results cannot be generalised, and they only reveal a certain trend. However, as they are in agreement with other researches (see discussion), their publication does add to understanding of the general situation in ESP teaching via ICT application. The respondents were mostly university ESP teachers from Georgia, however, 35% of the respondents were from several European and Asian countries.

Table 2 presents the statistical results of the questionnaire application: measures of central tendency (mean, mode, and median) and of variability (standard deviation, skewness, and kurtosis). Item numbers are the same

Table 2 Descriptive Statistics

Item	(1)	(2)	(3)	(4)	(5)	(6)
1	3.9250	5.0	4.0	0.99711	–0.497	–0.818
2	3.9600	4.0	4.0	0.92494	–1.208	1.674
3	4.2000	4.0	4.0	0.80812	–1.353	2.277
4	3.8750	5.0	4.0	1.06669	–0.540	–0.919
5	4.3000	5.0	5.0	1.28502	–1.818	2.157
6	3.9565	5.0	4.0	1.29883	0.350	0.382

Notes   Column headings are as follows: (1) mean, (2) mode, (3) median, (4) standard deviation, (5) skewness, (6) kurtosis.

Table 3 One-Sample Statistics

N	Mean	Standard deviation	Standard error mean
6	4.03	0.1714236	0.699834

as in the Table 1). All calculations, in Tables 1 and 2, were made with the statistical program SPSS 22. The mean results reveal that all answers are positive (close to or more than 4 on a 5-point Likert scale). As modes and medians are rather similar to mean results (4–5), we can view the results as trustworthy. However, the standard deviation, from 0.81 to 1.29 reveals that the opinions differ among the respondents (the group is reasonably heterogeneous, from the point of view of their viewpoints). The negative skewness in assessments of items 1–5 reveals that more respondents have lower assessments than the mean result compared to the number of the respondents who gave higher answers. On the other hand, the low but positive skewness of the last item (0.35) demonstrates that more respondents assessed the item more positively than the mean result shows (compared to those who gave it a low assessment). As on the whole the means are quite high, this does not change the overall picture too much.

Interestingly, the results of piloting of the questionnaire (with means between 3.80 and 4.20), in fact, are quite similar to the results of the survey. They also support the usefulness of ICT application while teaching ESP due to the authenticity of the materials.

We also held a one-sample *T*-test, to see whether the assessments of various features of ICT application in ESP teaching (most contemporary approach, increasing motivation, providing authentic materials and task-based activities, and effective interaction) differ significantly from each other. Tables 3 and 4 presents these results.

It is possible to see that $p = 0.000 < 0.05$, therefore, the obtained results are significantly different (for instance, the 3rd item: technology undertakes a significant function of the authentic materials in ESP classroom, and the 6th item: ICT plays a key role in developing language skills and pro-

Table 4   One-Sample *T*-test

t	DF	Significance, 2-tailed	Mean difference	95% confidence interval of the difference	
				Lower	Upper
57.672	5	0.000	4.0360833	3.8561185	4.215981

Table 5   Detailed Questionnaire Results

Survey Question	(1)	(2)	(3)	(4)	(5)
ICT application for ESP education in Georgia, as elsewhere, has become one of the major trends of contem. English language teaching in higher education institutions	0.0	10.0	22.5	32.0	32.5
The use of technology, according to the respondent teachers, increased student motivation for ESP teaching/learning by presenting authentic materials	2.5	5.0	5.0	55.0	32.5
Technology naturally integrates authentic materials in ESP classrooms	0.0	5.0	7.5	55.0	32.5
ICT tools are the most effective means to enable ESP learners to become more autonomous learners	0.0	18.8	18.8	37.5	25.0
The web-based learning environment in the ESP classroom has a great potential to support students' performance of tasks-based authentic materials (e.g., Ted talks and broadcasts) and to enhance their learning outcomes	0.0	2.5	5.0	35.0	57.5
ICT plays a key role in developing language skills and promoting different types of interaction that enhance learning and in developing ESP language proficiency	0.0	12.5	12.5	43.8	31.3

Notes   Column headings are as follows: (1) completely disagree, (2) disagree, (3) do not have a clear opion, (4) agree, (5) completely agree. In percent.

moting different types of interaction that enhance learning) were assessed especially high, while the 4th item (ICT tools are the most effective means to encourage ESP learners to become more autonomous) got a relatively low assessment.

Discussion

This paper contributes to the topic of incorporating ICT for authentic materials application in English for specific purposes classroom at higher education institutions (mostly in in Georgia).

The survey held has revealed that the respondent teachers support using ICT for ESP teaching. They agree that it is not simply the most contemporary trend (means 3.80/3.81/3.92), but also motivates students through the

use of authentic materials (means 4.01/3.96/4.12/4.10/4.20). ICT-based materials applied in ESP teaching support the development of learner autonomy (means 3.75/3.78/3.875). ICT application creates a learning environment that enables to apply task-based learning (means 4.00/4.20/4.30). Using technologies supports the development of language skills due to providing good samples of interaction and stimulating discussion around the contents of the materials (means 3.87/3.957).

Irrespective of the general agreement on the idea that information communication technologies are beneficial in a variety of areas of higher education (Fifeková, Nežinský, & Valachová, 2019; Mesaric, Kovacevic, & Šebalj, 2017; Omona, van der Weide, & Lubega, 2010; Spieler & Kovac, 2017), including English language teaching (Al-Kamel & Chouthaiwale, 2018, Sabiri, 2019; Tri & Nguen, 2014), there are few empirical studies on their application for English for Specific Purposes teaching, while the majority of the publications dealing with the issue are narrative/descriptive (Torregrosa Benavent & Sánchez-Reyes Peñamaría, 2011; Zooharian, 2015). However, we found some empirical researches the findings of which are all in agreement with our findings. Brinton (2001), for instance, mentions that 'they [ICT] can reinforce for the students the direct relation between the language classroom and the outside world' (p. 461). Besides this, when they are presented through the usage of technology, e.g. TED talks, news reports, Youtube videos, etc. ESP learners mostly focus on understanding the content rather than the form. Thus, presenting such materials through ICT represents a rather valuable means for effective language input and boosts the learners' self-esteem and desire to take more serious and advanced steps to ESP acquisition, among the learners.

Vaičiūnienė and Užpalienė (2010) held a survey on 122 students' views on motivation of learning ESP. The respondents supported the benefits offered by technology-based authentic materials: 'educational and communicative value, development of professional knowledge, valuable source of language input' (p. 94). Ayuningtyas (2017) held an observation with a questionnaire including 117 university technical students learning |business English, which also confirmed that students both benefit from and enjoy using authentic materials, especially those found on the Internet. Nadrag and Buzarna-Tihinea (2017) emphasise the increase of student communicative competence through the use of authentic materials in ESP classes.

The first finding of the submitted research is that ICT has become indispensable for ESP teaching (the mean result is 3.92 on a 5-point Likert scale, which is a high enough result. The finding partially coincides with previous studies on similar topics. Although Simonova (2014) expected that the application of ICT for ESP teaching would yield higher academic achievement, it did not occur in her 2-year study with 303 faculty of informatics and

management students in Croatia. However, she states the low level of technology skills of language teachers among the possible reasons of such results. Donal et al. (2020) in their study including 52 agro-business students revealed that the respondents (students) apply ICT in ESP for several purposes: as materials resources, unlimited professional communication means and for classroom management (when students are split into groups working together in class and/at home to complete an ESP task.

According to the second finding, the use of technology is crucial for motivation while teaching/learning ESP (mean result 3.96). Altalib (2019) came to a similar finding. Based on Dörnyei's (2005, 2009) second language motivational self-System, he delivered ESP and general English classes to 4,043 students at four Saudi universities. The students then filled in an online survey which revealed that the ESP group increased motivation more than the GE group.

The third finding has demonstrated that nowadays ICT has the major role in providing up-to-date authentic materials for ESP students (mean result 4.2), as the majority of existing ESP textbooks contain mostly outdated and often adapted authentic or totally inauthentic texts. This finding is in line with Blagojević (2013) and Pérez Cañado and Esteban (2015).

The finding that ICT tools increase ESP learner autonomy (mean result is 3.875) is supported by Selama (2018) and Diaz Ramirez (2014). Selama (2018) held a case study in Algeria for 40 English for Engineering students. In a survey, they confirmed that the application of ICT has contributed a lot to their autonomy as language learners. An action research was conducted by Diaz Ramirez at a public university in Colombia with environmental engineering undergraduates. Through students' field notes, semi-structured interviews, self-assessment questionnaires and video recordings, the researcher came to the conclusion that their learner autonomy was gradually increasing and eventually reached a high level.

The fifth finding emphasised that the ICT-based learning environment permits to involve the students into task-based activities (mean result 4.3). This finding is in line with the research by Yundayani et al. (2019).

And, finally, the finding that ICT plays a key role in developing language skills and promoting different types of interaction that enhance learning (mean result equals 3.9565) is in line with numerous other studies (Al-Kamel & Chouthaiwale, 2018; Brinton, 2001; Dörnyei, 2009, 2005).

The results of different questions are significantly different from each other ($p = 0.000 < 0.05$, according to one-sample *T*-test (Cronbach's alpha).

Conclusion

To once again prove the importance of ICT in effective integration of authentic materials in ESP classrooms, a small-scale online survey was conducted

in Georgia among ESP teachers. The findings were as follows and the majority of the participant teachers completely agreed or agreed that:

1. ICT application for ESP education in Georgia, as elsewhere, has become one of the major trends of contemporary English language teaching in higher education institutions.
2. The use of technology, according to the respondent teachers, increased student motivation for ESP teaching/learning by presenting authentic materials.
3. Technology naturally integrates authentic materials in ESP classrooms.
4. ICT tools are the most effective means to enable ESP learners to become more autonomous learners.
5. The web-based learning environment in the ESP classroom has a great potential to support student performance of tasks-based authentic materials (e.g., Ted talks and broadcasts) and to enhance their learning outcomes.
6. ICT plays a key role in developing language skills and promoting different types of interaction that enhance learning and in developing ESP language proficiency.

These results are in line with other researches on the issue, according to which, ICT enables ESP teachers to incorporate fresh authentic materials according to student interests and needs in the ESP classrooms. This enhances the application of communicative approach to language learning, motivates learners through visual images/recordings, broadcasts taken from real-life situations and engages them in most interesting discussions and debates around the specific professional areas. Students and teacher search for authentic materials on the Internet, fulfil written or oral assignments, and eventually submitting what they have done for assessment.

Recommendations

As this research was limited in scale and generally, there is a certain lack of empirical studies dealing with application of EST in teaching/learning ESP and a further, wider-scale research on the issue is necessary. But even the limited number of such studies enables us to recommend to increase the ICT use in ESP classes, to make it more various by materials and methods of teaching.

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