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### A digital revolution in the ESP classroom? The potential of apps, podcasts, e-mags, and social networks revisited

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# A digital revolution in the ESP classroom? The potential of apps, podcasts, e-mags, and social networks revisited

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**Abstract.** The digital revolution provides users with almost unlimited information access to English sources anytime, anywhere. What effects does this have on the teaching and learning of English for Specific Purposes (ESP) in the classroom and in self-directed study? It is the aim of this contribution to briefly examine the potential of online dictionaries, e-learning platforms, e-magazines, podcasts and other applications for developing communication skills in ESP. The contribution starts by evaluating the expectations and needs of the learners. It then briefly introduces the program structure of ESP courses at the University of Applied Sciences in Zwickau (Germany) focusing on English for Computer Science. In this subject, students are particularly prone to use state-of-the-art technology and material. Therefore, some authentic means of communication used in the classroom and for self-directed study are presented. Students highly ranked the turn to an increasing number of authentic language activities based on digital material because this also turned out to be applicable during lectures and seminars at the domestic institution and when studying abroad. Thus, ESP lecturers are challenged to reconsider traditional schedules and incorporate more practice-oriented, media-based assignments to maintain students' interest and to achieve long-term ESP learning outcomes.

**Keywords.** E-learning, podcast, e-magazine, app, English for specific purposes, students, lecturers.

## 1. Introduction

### 1.1. Technical developments and their effects

The digital revolution and the emergence of an increasing number of mobile devices allow users access to almost unlimited sources of information, from authentic texts to videos anytime, anywhere. Gadgets such as ultrabooks, tablets and smartphones as well as fast Wi-Fi availability in class make information retrieval an easy and challenging task for learners. Even smaller devices will penetrate the market in the forthcoming years such as smart watches and Google Glass with their augmented reality functionality. They will probably change the way of acquiring knowledge and practising languages entirely due to their unlimited Internet access. They will also tremendously change the structure of English classes and other study programmes. In the future, students will have much more opportunities and freedom to apply their language skills in social media, blogs and other networks. They can retrieve real-time information and enter yet unknown areas. This will immensely spur their motivation to learn and use a foreign language, in particular English. From the teaching perspective, on the other hand, the technical developments will prompt ESP lecturers to not only familiarize with modern devices but also to design new concepts for their course structure and for testing the acquired knowledge. The digital revolution in the classroom has only begun. To provide some support to ESP teachers in this endeavour, this paper briefly examines the state-of-the-art in the field, seen from a German ESP teacher's perspective. The paper provides some insight into currently available digital materials and their practical use.

### 1.2. Students' expectations and needs

First of all, it is important to underline that the learning outcome is highly dependent on the motivation of students to acquire knowledge and language skills. In order to evaluate students' major motivation and objectives, Werthebach (2012) recently performed a survey on the expectations of technical students from their English language classroom. The results reveal that the acquisition of new specialist vocabulary (85%) is still the most commonly mentioned learning target of students. Moreover, they expect a proper preparation for the English exams (75%) (almost ignoring that the acquired foreign language skills are useful for their professional career), the development of writing skills (57%) and repetition of grammar (58%). Their major objectives include: (1) Fluency in speaking (71%); (2) Understanding LSP texts (16%); (3) Improving listening skills (10%). Considering these expectations and the future professional needs (research tasks, company communication, business deals), work in the classroom needs to be highly authentic, up-to-date, purposeful, motivating, interactive and above all also entertaining. Such sophisticated goals represent a really challenging task for ESP lecturers, first because there is a limited schedule for teaching and second, the subject matter to be taught is highly specific and requires some insight into possible interaction and communication settings as well as current developments. What digital material can be applied in this context and how can it serve the needs of both lecturers and students? This question will be addressed in the following chapters.

### 1.3. ESP programmes at the University of Applied Sciences Zwickau

The University of Applied Sciences Zwickau offers ESP modules for almost all of the approx. 35 study programmes basically referring to natural sciences and technology. The basic course is mainly scheduled for 120 hours of teaching in one term, which in fact means one third on-site teaching hours and about two thirds self-instructed study. The language level taught in the basic programme targets intermediate language proficiency (B2 according to CEFR). The examinations comprise of an oral exam (professional presentation on a chosen subject, 10-15 minutes per person) and a written test (90 minutes) including subject-relevant vocabulary tests, general academic English as well as grammar and an ESP reading assignment. When designing ESP courses, several components need to be considered. In order to boost both the motivation of the students and to meet the requirements of the professional practice, the following aspects need to be incorporated: Academic English (e.g. listening to lectures and talks), Professional English (e.g. subject knowledge on software and hardware, interaction skills to present and defend a subject-specific topic during conferences or meetings), Business English (e.g. skills to manage business-related tasks, e.g. writing e-mails, making phone calls) and Intercultural Communication, since the majority of the students will work at some point for global players (see Fig. 1). Moreover, both contents and skills are to be developed. Because of this complexity, which is hard to handle in just one term, some elective courses were introduced basically focusing on the ability to speak about a subject topic and to write a longer piece of argumentation (professional essay). The language level target of the elective courses is B2+/C1 level (according to CEFR). Learning outcomes show that this combination of compulsory and elective training lets students better master language requirements in both their studies and in professional activities. Class surveys among computer science students on the effectiveness of their courses revealed that they would like to use more digital opportunities to acquire knowledge and practise it. Fig. 1 summarizes the interconnection between the required ESP course elements.

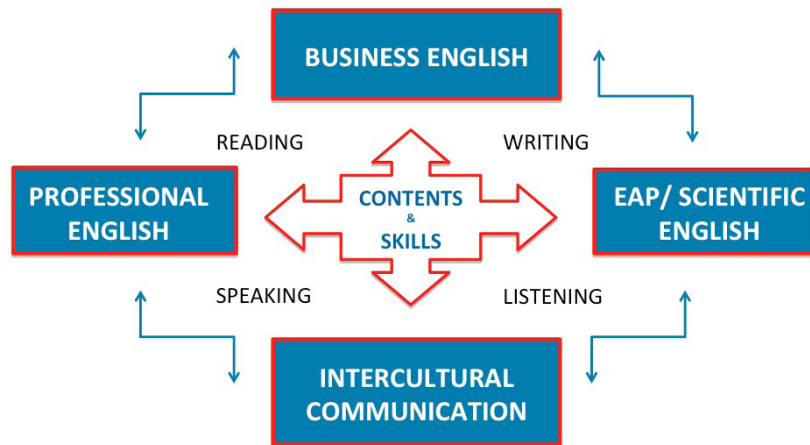


Figure 1: Overview of required course components

### 1.4. Course specification for Computer Science students

The first-term compulsory English course for B.A. students of Computer Science focuses on topics relating to computer hardware and software, operating systems, programming languages, software applications, virtual reality, artificial intelligence and mobile computing. Moreover, students deal with general science topics such as the use of numbers, symbols and graphs as well as academic issues, for example the study at the University of Applied Sciences in Zwickau. The business-related aspects briefly refer to the development of letter and e-mail writing skills, the preparation of job applications and interviews for the internship as well as the presentation of a project and the writing of an abstract/ summary.

The third-term elective module spurs the development of productive skills, in particular the writing of an essay on a current topic in computer science as well as on the short presentation of a stated opinion in form of a science slam.

Finally, the module Global Business and Project Management in English (which is part of the Master's degree in Computer Science) finally targets a solid level C1+ (CEFR). On that level, students should be able to properly speak and write about subject-specific items as well as complete business-related professional assignments.

## 2. Overview of digital material

### 2.1. Online dictionaries

Formerly, there has often been a debate on which type of dictionary to be used in a language classroom – monolingual or bilingual. Today, online dictionaries and apps are a very valuable source for students to get proper and real-time information on the meaning of words both from a bilingual or monolingual format. The developed general online dictionaries for English (e.g. the Oxford Advanced Learners Dictionary, <http://oald8.oxfordlearnersdictionaries.com>) as well as the bilingual dictionaries like (dict.cc, [www.dict.cc](http://www.dict.cc)) and text-based sources (e.g. [www.linguee.com](http://www.linguee.com), [www.linguee.com](http://www.linguee.com)) prove to be very comprehensive for fast information retrieval on terms and usage. Subject-specific sites, e.g. the German Computer Dictionary (see <http://www.computer-woerterbuch.de/>) or English for Computer Science Words (see <http://cs.joensuu.fi/kielikurssit/englanti/compukeyword.html>), are also a sound reference for developing terminological knowledge, for defining concepts and for learning about context use of terms. Such continuously updated and improved dictionaries can now also be accessed from mobile devices, so it will be easy to retrieve the usage pattern of a word (e.g. meaning, grammar features, collocations and pronunciation) on the go.

### 2.2. Applications and e-learning platforms

Traditional ESP teaching has basically been relying on English textbooks for the subject to be taught, on script material and journal articles. For some years now, the material of publishers has successively been accompanied by workbooks and CDs. In Germany, publishing houses like Cornelsen, Klett and Hueber have developed short course series of textbooks for many application areas (see respective websites). More recently, these materials have been supplemented by online worksheets and/ or audio/ video files in MP3 or MP4 formats. However, the majority of teachers and students would like to use more authentic and topical materials in the classroom without the need of time-consuming searches on the Internet and developing script material, which may infringe copyright law. So there were a couple of good reasons to develop e-learning platforms and apps that support both teachers and learners in their daily routine.

A brief i-Tunes search for „English language programmes“ available online revealed more than 100 applications on various language levels and for a multitude of target audiences. These prove to be valuable add-on materials for self-instructed study and exercising.

Moreover, several types of e-learning platform have evolved. In Germany, it is in particular Moodle and OPAL (developed by a Chemnitz-based company) that took the lead. However, the development and implementation of online course programmes and assignments or hybrid learning arrangements in such contexts requires not only profound technical skills of the lecturers but also a lot of time. Moreover, test scenarios and control mechanisms need to be implemented to make it a learning material used by the students with proper motivation and self-instruction. Once the program is finalised, it will already be outdated to some point, in particular in subjects like Computer Science. So continuous updating is required on the part of the programme designers and lecturers. Nonetheless, the achieved standard is fairly high. Let us examine two examples of web-based courses:

Professor Uwe Bellmann (HTWK Leipzig) was one of the first who developed a web course following a very systematic approach. E-xplore Technical English addresses the needs of students in technical subjects on the language level B1 targeting C1 and offers plenty of opportunities for self-instructed study and exercising. The course includes both skill-related assignments as well as content-based text material. Fig. 2 provides a general overview of topics covered (free access). Moreover, there are units that require login data and paid consistent self-study.



Figure 2: Web course e-Xplore Technical English

Professor Christine Sick (HTW Saarbrücken) and EuroKey Software GmbH developed the online programme TechnoPlus English focusing on both engineering topics taken from Mechanical and Automotive Engineering, Electrical Engineering, Computer Science and Communications Engineering, Mechatronics and Sensor Technology, Biomedical Engineering and Civil Engineering. Fig. 3 provides an overview of text material used in the programme (Source: <http://www.technoplus.info/konzept.htm>).

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Figure 3: TechnoPlus (screenshot taken from: <http://www.technoplus.info/konzept.htm>)

Apart from the provided contents, the programme TechnoPlus English also considers business-related issues, for example Enquiries, Arrangements, Negotiating, Meetings, Order Processing, Presentations, Applying for a Job. Fig. 4 is a screenshot taken from the Chapter Arrangements dealing with telephone calls. A demonstration unit (Hoover Dam, see demo tour at [http://www.technoplus.info/online\\_demo.html](http://www.technoplus.info/online_demo.html)) illustrates the approach. A video comprehension task introduces the unit, then comprehension exercises are provided as well as different kinds of vocabulary exercises and grammar trainings. This particular unit also focuses on numbers and measurements.



Figure 4: TechnoPlus (screenshot taken from: <http://www.technoplus.info/konzept.htm>)

The two examples presented are excellent evidence for the high quality standard of e-learning material achieved. Both programmes include topical and challenging assignments for the students of technical subjects. The offered assignments can be used both in-class or in self-instructed study.

### 2.3. E-magazines and newsletters

In order to supplement the traditional and new e-learning resources for ESP teaching, lecturers may refer to material provided by e-magazines and e-newsletters. Very valuable sources in this field include:

1. *Scientific American* ([www.sciam.com](http://www.sciam.com)) and *MIT Technology Review* (<http://technologyreview.com>) with up-to-date reports on scientific progress in many technological fields;
2. *How it Works Magazine* (<http://www.howitworksdaily.com/>), focusing on developments in technology, science, history, environment, transport and space;
3. Engine – Englisch für Ingenieure (<http://www.engine-magazin.de/engine-Log.htm>) including video and audio sequences, a blog and reports on recent technological developments, technical term lists, vocabulary and grammar exercises as well as country portraits and intercultural case studies.
4. E-Newsletters of professional magazines are also an interesting resource of up-to-date developments. Daily or weekly updates on very specific topics are provided, for example by: TechRepublic (Daily Digest), MIT Technology Review and Solid State Technology (MEMS). Moreover, blogs accompany many technology and company websites, which also may be applied for interaction between ESP lecturers and experts or even between students and experts. However, blogging has not yet been used too often in my ESP classrooms because students do not want to leave their digital fingerprint on the web and sometimes do not dare to discuss critical issues on the Internet.

### 2.4. Podcasts and webinars

Students sometimes complain about the “incomprehensibility of authentic English”. They are often not familiar with the various English dialects and accents. Therefore, podcasts and video files represent a useful tool to develop both awareness for the varieties of English and for training listening comprehension skills in a variety of fields and communication scenarios. The journal *Scientific American* ([ww.sciam.com](http://www.sciam.com)), for example, offers several podcasts on their website that only last about 60 seconds: *60 Second Tech*, *60-Second Science*, *60-Second Earth*, *60-Second Mind* as well as *Science Talk*. These short sequences of up-to-date information can effectively be used in class to check listening comprehension on the one hand but also to develop own speaking fluency on the other (for example, when the text needs to be back-read for time). Short statements are an ideal stimulus for discussions or for writing a short comment (e.g. for a blog entry).

The more advanced students can also refer to longer podcasting sessions. *IT Conversations* ([http://web.archive.org/web/20130729200341id\\_/http://itc.conversationsnetwork.org/](http://web.archive.org/web/20130729200341id_/http://itc.conversationsnetwork.org/)), for example, provided interesting talks and interviews on developments in the field of Computer Science. Unfortunately, the website does not exist any longer but one may refer to a rich text and file archive. *TED Talks Ideas Worth Spreading* (<http://www.ted.com/talks?lang=de>) is another interesting source to be considered, providing access to talks and lectures on specific technological advancements.

*BBC Click* and other broadcasting stations offer weekly series on technology and engineering topics so that teachers can easily retrieve interesting audio/ video material for use in-class or self-instructed study.

Webinars are increasingly being offered by professional organizations and educational institutions. Since the number of lectures in English is still low at my domestic institution, it will be a very good opportunity to use webinars as an additional instrument for teaching/

learning subject content and for training listening comprehension in English. After introducing the genre in the classroom, students are asked to attend webinars on their own and to check their understanding with the help of comprehensibility assignments. Moreover, the interactive character of this genre will also spur real professional interaction of students. For this purpose, students should be prepared properly to discuss current issues and respond to requests.

### 2.5. Social networks and blogs

The majority of students is affiliated with one or the other social network these days. However, computer students are a little hesitant in this respect. They often do not want to be followers of Facebook, LinkedIn or other social networks because they are in particular aware of the benefits and drawbacks of such media use. They, of course, also benefit from real-time communication with many participants in order to exchange their views upon specific issues. Networks are often used to retrieve information fast or to get rapid feedback on study-related issues. However, the language used in this context is often of poor standard, too colloquial and shortened with a number of mistakes. So the overuse of such communities can also spoil the achieved foreign language quality, in particular in terms of writing habits and speaking competency. Therefore, lecturers should consider a careful and purposeful use of social networks without anonymous and unqualified responses. An alternative to established broad social networks is TANDEM work, that means, forming learning partnerships on-site between native and non-native speakers/students of a language or institutionalized exchange networks between domestic university and cooperation partners abroad.

### 3. Conclusion

This paper introduced some useful digital resources for teaching in the ESP classroom and briefly touched upon their enormous, yet unexplored potential. Online dictionaries allow easy access to the meaning of words and terms as well as to their proper use and pronunciation. They are also available on mobile devices and can therefore be used anywhere, anytime. The many applications available on the go and the developing e-learning platforms as well as podcasts and webinars offer plenty of opportunities for the student learners to acquire new knowledge and to train reading, listening and speaking skills in almost authentic situations. Moreover, social networks and blogs offer plenty of opportunities to enter semi-professional and professional communication. The lecturers have a portfolio of new materials at their disposal to supplement traditional teaching and to better prepare students for their professional career. Moreover, e-magazines and professional newsletters give lecturers and students an insight into the development of technology so that they can interact on challenging topics in the classroom and organize an efficient and motivating self-instructed study process. Social networks and blogs can be used for authentic communication, which can motivate students even more to practise their acquired language skills.

The multitude of opportunities offered by the Internet challenges ESP lecturers to reconsider traditional schedules and incorporate more practice-oriented, media-based assignments to maintain students' interest and to achieve long-term ESP learning outcomes. This will also have a tremendous impact on the type and contents of English examinations. The digital revolution of the classroom has only started and it is up to the lecturers and students to make it a profitable reality!

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