

An Innovated ESP Course in Reading Skills for Technical Students – Tertiary Education

Author:

Marcela Borecká, Brno University of Technology, Faculty of Electrical Engineering and Communication, Údolní 53, 602 00 Brno, Czech Republic, borecka@feec.vutbr.cz

Abstract — Information concerning the place of a specialized course in reading skills within the system of teaching ESP at the Department of Languages, its place in the credit system, and under new conditions as an offer to students of two faculties (Faculty of Electrical Engineering and Communication, FEEC, and the Faculty of Information Technology, FIT) is outlined in the communication. The main purpose of introducing the course, the prerequisites, short-term and long-term aims of the course, needs analysis and feedback evaluation, evaluation of students' progress, course design and materials design, and a wide variety of skills practised with the aim of improving technical students' competency in English are included. Innovation of the course as far as the contents and materials are concerned, change of focus, and examples of new teaching and examination materials will be presented in the contribution.

Index Terms — Course design, materials preparation, reading skills

INTRODUCTION

With the increasing English language competence of students entering the Faculty of Electrical Engineering and Computer Science /FEEC/ in the early 1990s, the Department of Languages decided to meet their demands by offering optional specialized courses in addition to regular English lessons.

Though technical texts had been incorporated into all standard English courses / Pre-Intermediate, Intermediate and Upper-Intermediate/, the level of English of newcomers made us think of offering specialized courses where the more advanced students could improve and cultivate specific language skills. The first course specialized in developing individual skills was a course combining reading and listening /in 1992 /. It split into two separate courses the following academic year. A specialized course in reading skills was first offered at the Department of Languages in 1993. It was meant for students who had passed an examination in a standard English course and had reached the intermediate level of English (to avoid mixed-ability groups). The main purpose of introducing the course specialized in ESP reading was to get a text-oriented course tailored to the needs of technically-oriented students specialized in different fields of electrical engineering, communication and information technologies, a course focused on texts and reading skills useful for both the present academic work and the future profession of the participants. Before tuition of postgraduate students /PGS/ in regular courses of English was available at the Department of Languages, these students also found the course in reading skills a useful part of preparatory work for the PGS doctoral examination.

On 1st of January 2002 the FEEC split into two faculties – The Faculty of Electrical Engineering and **Communication** and the Faculty of **Information Technology**. The change urged me to modify and update the content of the course because it needed to be both refreshed and made more relevant. As the course is offered to students of both faculties, the attention must be focused on various applications of information technology (IT), as well as modern communication technologies (see the example - Bluetooth).

The study programme at both faculties including the Department of Languages is based on the credit system, which means that each course is evaluated by a number of credits, a credit represents the degree of the student's load during certain period, and - on successful completion of a course - the student receives the nominal number of credits pertaining to the course. In case of specialized two-semester courses, students are awarded 4 credits per exam.

COURSE DESIGN

Aims of the course

Short-term aims: to practise and master reading skills and strategies required at national and international examinations in English /the State Exam, the PGS Exam, and Examinations in English As a Foreign Language, e.g. Cambridge Exams organized by the University of Cambridge Local Examination Syndicate: FCE, CAE, and others/

Long-term aims: to equip students with a variety of reading techniques and strategies so that they might achieve a higher level of reading /i.e. better comprehension and more efficient reading/ for both academic and professional purposes.

Course organization

Length of the course: 2 semesters, 13 weeks per semester, 2 hrs a week = total 52 hrs

Testing and progress assessment:

a/ a short entrance test should verify the intermediate level of English

b/ 2 semester tests

c/ an examination worth 4 credits at the end of the course, which consists of one long technical text, one shorter general English text, both accompanied with tasks, and a part dedicated to vocabulary work

Homework is not regularly set as the study programmes at both faculties often make students deal with English written information necessary for their projects and theses, either in traditional form in self-access centres or in electronic form on the Internet. Reading fiction for pleasure is strongly recommended.

Content of the course

A needs analysis questionnaire helps to analyse the needs of the course participants, to find out as much as possible about their priorities, wants and expectations related to the course. I have included questions concerning participants'

- previous experience and present need of reading English texts
- types of English texts they would like to see in the course
- aims – both short-term and long-term ones
- expectations related to the course

The needs analysis questionnaires are meant to be filled in anonymously in the very first lesson of the course. In the following lesson the students are informed about the results of the evaluation of the needs analysis questionnaires. As in different groups /years/ students sometimes stress different items and have slightly different expectations, the answers help me meet their needs as far as the relevant topics and sub-skills are concerned.

Skills practiced in the course

Reading subskills

- skimming a text for the gist or relevancy
- scanning a text for particular information /advertisements, timetables/
- intensive reading for detail /instructions, forms, text corrections/, for in-depth understanding or for problem solving

Other skills are combined to achieve improvements in reading and to make the lessons more lively:

- **writing:** note taking while reading, cloze tests: i.e. filling gaps in texts through guessing the meanings of missing expressions from the context, reconstructions of texts read before /a complete cloze/, written reactions to what has been read, a written summary of a large text
- **speaking:** text-based discussions, retelling stories that have been read, short presentations of new electronic products based on written information, gap filling done orally, pair work or group work when solving problems
- **listening** to the teacher and fellow students in discussions with possibility of pronunciation corrections

Complementary skills

- vocabulary work: deducing meanings of unfamiliar lexical items /words, compound nouns / from the context, work with prefixes and suffixes, synonyms, antonyms

- familiarization with basic reference skills /use of indexes, dictionaries/
- familiarization with grammatical structures typical of professional technical texts
- extracting the gist of individual paragraphs to be able to complete a written summary out of a large text
- learning how to read mathematical formulae, fractions, symbols, graphs, charts, names of units, geometrical shapes, etc.

Types of materials used in the course:

general English - short stories accompanied by my own comprehension and other tasks, anecdotes cut into pieces to get jumbled texts for further re-arranging, newspaper articles, BBC English, authentic TV programmes and advertisements, timetables, forms, travel brochures, dictionary items, FCE and CAE Reading Papers from previous years available from the British Council, sets of Cambridge Exams Practice textbooks, articles bringing basic theory of reading as a process, articles on characteristics of British quality press and popular press, vocabulary – parts of books, part of newspapers

technical English- sets of specialized coursebooks, specialized articles from professional journals /New Scientist/, or Inside Out, the Supplement to the Guardian, authentic manuals, instructions, information articles on new products, graphs, charts, texts downloaded from the Internet

Students are encouraged to suggest topics they would enjoy reading about or bring in their own interesting texts.

A feedback questionnaire

At the end of the winter semester or at the end of the whole course students are asked to answer some questions /anonymously - for maximum objectivity/ to find out how they felt about the course, especially its efficiency and relevancy. Up to now their evaluation has always been positive: they have found the course very useful for the contact with topical materials and wide and varied vocabulary offered.

MATERIALS DESIGN

Choosing and adapting materials

In the course I always try to present materials

- which provide stimuli for learning
- which are relevant to our students / containing topics and vocabulary related to information technology, communications, renewable energy sources, but also general technical vocabulary because students attending the course originate from different study lines and they can usually cope with the highly specialized terminology of their particular study line in English. That is why we frequently work with semi-technical texts which help them develop comprehension and lexis of more general technical terminology/
- whose content can be coped with both by learners and myself
- which will engage students thinking capacities and
- which will give them opportunities both to use their existing knowledge and enrich it

As university students need to absorb the professional texts studied in English rather than just read them and forget them, they need to be trained in reading better and more efficiently rather than just faster, consequently I do not include speed training.

Training in **respective methodology** in courses organized for ESP teachers by the British Council in the 1990s proved to be of great help to me. I also completed a project during my study stay in Colchester English Study Centre, Great Britain, in 1993, focused on materials design and course design for ESP reading.

In addition to individual articles or professional texts accompanied by my own tasks, I regularly make use of **class sets** of textbooks/coursebooks thanks to the participation of the Department of Languages in the English for Specific Purposes Project sponsored by the British Council in the 1990s.

I would like to list here the main textbooks and other materials that have been used in the course since 1993:

- [1] Greenall, Simon and Swan Michael: Effective Reading , (for advanced students), CUP, 1991
- [2] Walter, Catherine: Authentic Reading , (for upper-intermediate students), CUP, 1992
- [3] Johnson, D.: General Engineering, English for Academic Purposes, Cassel Publishers, 1989
- [4] Glendinning, Eric H. and Holmström Beverly: Study Reading, CUP, 1992

- [5] Tomlinson, Brian and Ellis Rod: Reading Upper-Intermediate, OUP
- [6] Tomlinson Brian and Ellis Rod: Reading Advanced, OUP, 1991
- [7] Glendinning Eric H. and McEwan John: Oxford English for Electronics, OUP, 1993
- [8] Glendinning Eric H.: English in Electrical Engineering and Electronics, OUP, 1990
- [9] Hutchinson, Tom and Waters Alan: English for Technical Communication, Longman, 1992
- [10] Glendinning, E.H.: Oxford English for Electrical and Mechanical Engineering, OUP, 1992
- [11] Boeckner, Keith and Brown P. Charles: Oxford English for Computing, OUP, 1993
- [12] Yates J. and Fitzpatrick A.: Technical English for Industry, Longman, 1993
- [13] Comfort Jeremy, Hick Steve and Savage Allan: Basic Technical English, OUP, 1992
- [14] technically-oriented articles from BBC English Magazine
- [15] technically-oriented articles from the Supplement to the Guardian called Inside Out
- [16] technically-oriented articles from New Scientist
- [17] Grellet, Françoise: Developing Reading Skills, CUP, 1990

Only suitable chapters adequate to the level and specialization of the course participants have always been chosen. Besides relevant chapters taken from the above-mentioned textbooks, I used to copy texts from the Supplement to the Guardian called Inside Out and from New Scientist and similar professional journals, when producing my own technically-oriented materials for the course.

INNOVATION

Since the new FIT came into existence last year, more accentuation and stress has been laid on IT, multimedia, and similar topics as far as the content of the course is concerned. Moreover, a new source of suitable texts has become available at the Department of Languages recently /the Internet/, which helps my work enormously.

The main **aim of the innovation** is to update the content of the course through acquiring recent technical and general English texts. Reading skills to be trained will remain the same /see: 3.2/ with stress on guessing the meaning of unfamiliar expressions from the context, incorporating new information into the existing knowledge of English, adapting reading speed to the difficulty of the text, and absorbing the ever-increasing number of new technical expressions and grammatical structures typical of the professional language.

The innovation of the course will be based on

- a) new **class sets of relevant textbooks**
- b) **materials designed** especially for the purpose of this course and based on up-to-date texts downloaded from the Internet /see an example pp.6-7/, or based on authentic articles from original English scientific journals and sometimes also from various technical texts brought in by students.

In a), the main drawback is the high price of a class set /the number of students in the course throughout the years has been 15 to 35/ and the fact that the textbooks are rapidly outdated. The advantage is the reliability and the ready-to-use character of the individual chapters. At present I am comparing the quality and relevancy of two recent publications.

1. Glendinning E.H. and McEwan J.: **Information Technology**, OUP, 2002

This course is designed for people studying IT and Computing and it is suitable for use in universities with intermediate to advanced level students who want to improve and extend their language skills in the context of IT. 25 units of the book cover a wide range of current IT topics: Computer architecture, computer applications, peripherals, operating systems, multimedia, networks, the world wide web, websites, the Internet, communications systems, data security, software engineering, electronic publishing, recent developments in IT, and the future of IT.

I have found out that the parts called Specialist Reading, which present more advanced texts, could suit the level of English and study specialization of the course participants. These parts are meant for students already proficient in computing in their own language. The coursebook is equipped with a Glossary of computing terms and abbreviations, Progress Tests, and photocopiable parts that could be used in class.

2. Santiago Remacha Esteras: **Infotech**, CUP, 2002

I have been trying to introduce selected parts of this revised and updated comprehensive course into class. It is meant for learners at intermediate level who need to understand and use the English for computing and multimedia.

In my opinion both textbooks would work, though Information Technology will perhaps suit our purpose better because it is more demanding.

In 2002 I handed in a project proposal to get money for class sets of these coursebooks /or at least one of the two/ from the University Development Fund of the Czech Republic. I was not successful but I will try to achieve funding the class sets again in future. For the time being I have decided to use websites as a source of relevant technical texts.

As for b), adequate pre-reading, while-reading and post-reading activities aiming at training different reading skills, vocabulary and grammar structures typical of technical texts have to be devised to accompany the topical downloaded technical texts, which is extremely time-consuming. The good point here is the fact that interesting, current texts can be downloaded ever again.

CONCLUSION

In modern society expanding knowledge means more and more information to read both in traditional and electronic form, in electrical engineering, electronics, communications, and information technology mostly information in English.

To keep students interested and motivated for reading, the course should be regularly updated. The texts should keep up with new scientific developments and with the new situation in modern global society.

Not only should the texts be relevant to the study specialization of the participants of the course, more general themes, such as environment-friendly technologies /waste-recycling or renewable energy sources/, safety at work, getting a job, or a healthy life-style should be included, too.

I hope the innovated course will help technical students improve:

- the techniques and strategies leading to efficient reading
- the level of comprehension of English texts
- the orientation in difficult, unknown texts in English
- the ability to decide about a new text relevancy
- the use of lexis (both general and technical)
- grammar structures typical of technical texts

I also hope the **innovated course** in reading skills will form a **useful option** besides more communicative specialized courses offered at the Department of Languages which are less based on written English (e.g. Listening, Everyday Conversation).

An example – the text has been downloaded from the Internet and equipped with tasks, only three types of which are included here

Reading Skills

Time 20 minutes

BLUETOOTH TECHNOLOGY

1

Bluetooth wireless technology is a worldwide specification for a small-form factor, low-cost radio solution that provides links between mobile computers, mobile phones, other portable handheld devices, and connectivity to the Internet. The specification is developed, published and promoted by the Bluetooth Special Interest Group (SIG).

2

Bluetooth wire technology revolutionizes the personal connectivity market by providing freedom from wired connections – enabling links between mobile computers, mobile phones, portable handheld devices, and connectivity to the Internet. Bluetooth technology redefines the very way we experience connectivity.

3

While the possibilities are nearly endless for the use of the technology, some of the current capabilities include:

- eliminating the need for wired connections between electronic products and accessories ,
- exchanging files, business cards, calendar appointments, etc. with groups of Bluetooth users ,
- transferring and synchronizing files between devices,
- connecting to localized content services in public areas ,
- functioning as remote controls, keys, tickets and e-cash wallets

4
Establishing a standard means integrating well-tested technology with the power-efficiency and low-cost of a compliant radio system. Establishing a standard also means a group of industry leading promoter companies who drive the specification forward (Bluetooth SIG). Bluetooth technology works because it has been developed as a cross industry solution that marries a vision of engineering innovation with an understanding of business and consumer expectations.

5
Bluetooth wireless technology is unique in its breadth of applications. Links can be established between groups of products simultaneously or between individual products and the Internet. This flexibility, combined with strict interoperability requirements, has led to support for Bluetooth wireless technology from a wide range of market segments, including software developers, silicon vendors, peripheral and camera manufacturers, mobile PC manufacturers and handheld device developers, consumer electronics manufacturers, car manufacturers, and test and measurement equipment manufacturers.

6
The Bluetooth wireless specification defines a low-power, low-cost technology that provides a standardized platform for eliminating cables between mobile devices and facilitating connections between products. Unlike many other wireless standards, the Bluetooth wireless specification includes both link layer and application layer definitions for product developers.

7
Radios that comply with the Bluetooth wireless specification operate in the unlicensed, 2.4 GHz radio spectrum ensuring communication compatibility worldwide. These radios use a spread spectrum, frequency hopping, full-duplex signal at up to 1600 hops/sec. The signal hops among 79 frequencies at 1 MHz intervals to give a high degree of interference immunity. While point-to-point connections are supported, the specification allows up to seven simultaneous connections to be established and maintained by a single radio.

8
Synchronizing the capabilities of the telecommunications, computing, and networking industries Bluetooth SIG members understand innovation and the business of innovation.

The Bluetooth SIG provides a forum for companies to work together using short-range wireless technologies to solve customer problems. Companies can join either as Associate or Adopting .

The Bluetooth SIG promoters include 3Com, Agere, Ericsson, IBM, Intel, Microsoft, Motorola, Nokia and Toshiba, and hundreds of Associate and Adopter member companies.

Bluetooth Technology TASKS

A. Answer True/False

1. All wireless standards include both link layer and application layer definitions for product developers.
2. The Bluetooth technology provides a standardized platform for connection between mobile electronic devices without using cables.

B. Choose the most appropriate heading to summarize each of the 8 paragraphs of the text

- a) The forum of companies that make use of this technology
- b) Why this technology works
- c) Some of the technical details
- d) New type of personal connectivity
- e) Characteristics of the radio system
- f) Market areas where Bluetooth technology can be found
- g) Some of the current applications
- h) What is Bluetooth

C. Find in the text one word which has the closest meaning to:

modernization/novelty • global • eternal/infinite • supporter • invulnerability • happening at the same time • distant • without connecting cables

REFERENCES

- [1] Borecká,M.,“A Specialized Course in Reading Skills”, *ESP Spectrum*, No.9, Autumn 1995, Slovakia
- [2] Borecká,M., “Ultrasound Scanner - an Example of Materials Design for a Specialized Course in Reading Skills”, *ESP Spectrum*, No.10, Winter 1995, Slovakia
- [3] Borecká,M.,” Reading Skills – 6th year of Existence of a Specialized Course”, *Události VUT*, 1999, Czech Republic, in Czech
- [4] Borecká,M.,” A Specialized Course in Reading Skills – a workshop”, *Conferecnce Proceedings of the ATECR 2nd International and 6th National Conference*, September 2000, Plzeň, Czech Republic
- [5] Borecká,M.,” An Innovated ESP Course in Reading Skills for Tertiary Education”, *ATE Newsletter, Journal of English Language Teaching*, Vol.13, No.3, Winter 2002-2003, Czech Republic
- [6] Hutchinson,T.,” English for Specific Purposes”,CUP,1993
- [7] Grellet,F.,” Developing Reading Skills”, CUP,1990