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Learning design of a blended course in technical writing

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Abstract

Blending face-to-face classes with e-learning components can lead to a very successful outcome if the blend of approaches, methods, content, space, time, media and activities is carefully structured and approached from both the student's and the tutor's perspective. In order to blend synchronous and asynchronous e-learning activities with traditional ones, educators should make them inter-dependent and develop them according to instructional design. The writing component of a language course must aim at linguistic accuracy as well as simulated and authentic communication. All linguistic, communicative, general educational aims and single, measurable objectives should be clearly and precisely stated. The content of a course in Technical Writing should depend on students' needs and must be related to their study fields. If the learning environment is well organised, supportive and responsive, it provides good conditions and plenty of opportunities for personal growth and development of language skills.

Key words

e-learning, blended learning, writing, learning design

Projet d'apprentissage d'un cours mixte en écriture technique

Résumé

L'introduction des éléments de la formation en ligne dans la classe face-à-face peut produire des résultats fructueux si on combine les approches, les méthodes, les contenus, l'espace, le temps, les médias et les activités d'une manière bien structurée qui prend en compte les perspectives respectives de l'apprenant et du professeur. Pour relier les activités de formation en ligne, synchrones et asynchrones, avec les activités traditionnelles, les enseignants devraient les rendre interdépendantes et les développer selon un projet d'enseignement. La partie du cours de langue consacrée à l'expression écrite doit viser à développer la correction linguistique autant qu'à simuler une communication authentique. Tous les objectifs: linguistiques, communicatifs, éducationnels généraux et particuliers mesurables, devraient être communiqués avec clarté et précision. Le contenu d'un cours en écriture technique doit dépendre des besoins des apprenants et doit correspondre à leurs domaines d'études. Si l'environnement d'apprentissage est bien organisé, que l'atmosphère y soit ouverte et de soutien, il peut garantir des bonnes conditions et beaucoup de possibilités d'épanouissement personnel et de développement des compétences linguistiques.

Mots-clés

formation en ligne, apprentissage mixte, expression écrite, projet d'apprentissage

1. Blended learning

Blending face-to-face classes with e-learning technologies can lead to a very successful outcome if the blend of approaches, activities and media is carefully structured by course developers and tutors. This means that it is not sufficient to replace some traditional activities that have always taken place in the classroom with their equivalents developed in a new

environment, using innovative technologies. An e-learning component should be incorporated into the teaching programme in a meaningful way so as to enhance and improve it. Both educators and students must feel comfortable using new solutions and must understand why they have been introduced to the traditional, well-organised classroom. If teachers treat new technologies as unhelpful, they will not apply them, they will not encourage students to use them and they will not even check if students would like to work with them. If adult students do not realise what the purpose of blending is, they will not access e-learning materials at all or they will use them not very eagerly. If learners are told to do activities prepared in electronic format as additional training, they will probably occasionally access some materials, not paying special attention to their content. Moreover, if teachers do not monitor their students' work in an e-learning environment and do not support them when necessary (Mokwa-Tarnowska 2008), the outcome will be very poor. The most effective technology that can be used for teaching a foreign language is a virtual learning environment (VLE), that is, a course management system which is equipped with a vast range of tools and possibilities for developing versatile content, providing support and monitoring student progress.

2. Design

Incorporating e-learning into traditional face-to-face courses can be successful or unsuccessful, whichever result will be obtained depends on a wide range of factors. The content and structure of a blended programme, the way all the elements have been combined and the purpose they serve are of crucial importance. An e-learning component cannot be only an addition, its inclusion involves restructuring the whole teaching programme. If blended learning is to be effective, both the teacher and participants in the project should understand why they are using new technologies and what value these technologies are supposed to add. If an e-learning component

functions as a separate environment, it must also contain different well-developed support structures. What is more, both tutors and students must be aware of the affordances (Gibson 1979) of the technologies used in the project.

2.1. Structure of a blended course

When course developers decide to design a blended programme, they must consider the following factors: the method blend, the content blend, the space blend, the time blend, the media blend and the activity blend, and approach them from both the student's and the tutor's perspective (Littlejohn and Pegler 2007: 75-76). They should adopt the most effective combination of different teaching theories, which will allow them to meet course aims and specific objectives formulated for each module, activity and task. This stage of learning design must be done by experienced educators, who know how to motivate students and engage them in the learning process, and who have analysed students' needs. In this initial phase, developers must think over how much space in the blended programme should be given to the traditional environment and how much to e-learning, that is, what part of the course curriculum must be covered in class and what issues can be addressed using different specific technologies. In the case of a separate course in English for specific purposes, educators should decide if it can be taught entirely online, e.g., in a VLE or, if some topics must be discussed, during face-to-face meetings. In order to work it out, the types of learning environment available need to be specified and their ratio determined. Another important factor in the blending process is time. If a part of the course is to be prepared in a VLE, then, prior to developing synchronous activities, educators must find out whether the students and the tutor can meet at the same time to participate in them. Such activities may be incorporated into in-class teaching if

the meetings are in a room appropriately equipped[1] or they may be assigned as post-class learning if developers know ahead that both the students and the tutor can access the Internet and work simultaneously in the virtual classroom. When the types of learning environment have been chosen, it must be decided which media both teachers and students are able to use, and which they feel comfortable with. At this stage of learning design, it is necessary to select particular technologies which will be used to carry out course tasks and assignments. Prior to the commencement of the course, students must be informed what technologies and what version of software they are supposed to have in order to be able to complete the learning programme and to communicate with each other and with the tutor. e-Tools are likely to vary from one language course to another, their choice always depends on the materials and tasks developers want to include as well as on their usability and affordances, that is, on what can be achieved with them (Weller 2007: 121-123). Finally, educators must analyse what activities the curriculum must be structured around; whether the students need to work individually, in pairs or in groups; how effective problem-based learning will be in satisfying course aims and objectives. For example, as far as a course in academic or technical writing is concerned, it should be decided what activities, tasks and assignments will focus on developing simulated writing and what will help students practise genuine writing. In order to

[1] At the ONLINE EDUCA conference in Berlin in 2011, during one of the workshops, an interesting course in Technical Writing conducted at Iwate University in Japan was presented. Its aims were to improve students' language skills and to familiarise them with written discourse in English on the basis of the same topics which had already been covered during one of their regular courses in Biology, taught in Japanese. The cohort worked in a laboratory in the Moodle environment. All course materials were uploaded to the course website and, while working with them, the students were being supervised by a teacher of English, a linguist not a biologist, who provided them with feedback when they needed it. Their written productions were also peer reviewed. There were only synchronous in-class tasks and activities. The class was a success. The students improved their writing skills substantially, their productions were of a high standard, from the point of view of both language and content.

achieve the best possible learning outcome, the overall blend must be carefully and precisely balanced.

2.2. Interdependence of elements

In order to blend e-learning activities with traditional ones, educators should make them inter-dependent. This means that, when they introduce a topic that they want to be discussed and explored in class, they should design follow-up activities in an e-learning environment (Fig. 1), for example in a VLE, which students could do as homework.

If students learn during a traditional face-to-face lesson how to write a report on a certain subject, that is, what sections it must consist of, how it is laid out, what technical vocabulary and language structures it should contain, how to formulate research questions and how to make a hypothesis, they can be asked afterwards to do some exercises and answer questions about writing a report that the tutor or course developer has posted to a course website. Writing a report is an assignment which requires doing some research. Therefore, students should read appropriate information, e.g., uploaded for them and displayed on a webpage. On completion of their work, the tutor can ask their learners to send their reports via the VLE.

On the other hand, to successfully blend e-learning with traditional classroom activities, the tutor can first engage the students in some e-learning carried out either in class or before it, and then can add some speaking activities or paper-based tasks to be done during a face-to-face meeting or later at home (Fig. 2). If academic or technical writing is concerned, the course participants may be asked to find an interesting text on the Internet to be abstracted in class or they may be required to read before the class the uploaded research papers and the information on this genre prepared by the tutor or course developer and included in a VLE module. Later in class, the tutor may initiate a discussion on the research papers that the students have read earlier. The learners may be asked to evaluate their structure, to say whether the texts are analytical

or argumentative and what research questions or theses their authors included. They may be encouraged to summarise new ideas and findings and describe the experiments mentioned in the articles. The techniques of blending e-learning resources with traditional ones are called 'wrapping around' (Littlejohn and Pegler 2007: 30-31). An e-learning component is used to wrap around traditional activities or e-learning is wrapped around by conventional teaching (Fig. 1 and 2).

Figure 1
Wrapping around traditional resources
Source: based on Littlejohn and Pegler (2007: 30)

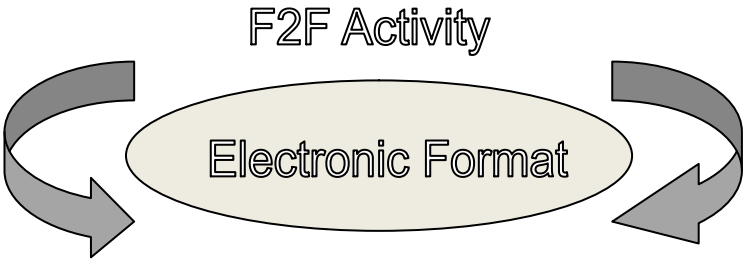

Figure 2
Wrapping around e-learning resources
Source: based on Littlejohn and Pegler (2007: 30)

2.3. Synchronous and asynchronous communication

When designing different e-learning activities, course developers should decide which of them will be synchronous and which asynchronous. Their choice must be influenced by learning design. If course developers or tutors regard synchronous face-to-face tasks as more authentic, thus better motivating, they should design activities around classroom teaching. If they think that synchronous chats in a technology-mediated environment are more interesting and more appealing to course participants than traditional discussions, they should include them in the lesson plan.

In the case of a course in academic and technical writing, asynchronous sharing of information is more useful as it allows more time for reflection and writing. As a result, student participation in such course activities leads to the improvement of their writing skills. When learners have enough time to prepare their posts, their entries are like small written assignments, whose quality is much better than that of synchronous responses. Asynchronous tutor feedback is also better structured and better thought-out than the immediate one, thus it can serve as a sample writing piece, especially when communication in formal English is a prerequisite for effective learning.

2.4. Instructional design

In order to prepare well-structured online activities, educators and course developers must pay special attention to instructional design, that is, to the designing of computer-based instruction (Jordan, Carlile and Stack 2008: 229-230). Firstly, the learning material should be divided into meaningful chunks. Smaller components are easier for students to work with and they can be reused, that is, incorporated into other online or blended modules. What is more, a modular arrangement of resources stimulates student engagement. Prior to the commencement of an online course

or an online component of a blended programme, learners should be informed what its aims are and, in the case of a separate course, what the contents are. Secondly, during the educational process, students should be exposed to course content arranged into modules, made available one by one. Too much information on web pages distracts attention, thus it is not advisable to give students access to all the resources, activities and tasks at once. If students could see and use any part of the course online materials just after they have enrolled, they would soon lose interest in them or, if they decided to do some exercises in advance, before they are properly introduced to them, they might not know how to approach them, which could result in the participants failing to complete the tasks. This could also dissuade some learners from doing them once again when required or necessary. Furthermore, each page of a learning resource should be carefully designed. Longish texts can discourage students, that is why they should be presented sequentially and each paragraph should not be much bigger than the size of the screen. Reflective tasks or short questions, easy to answer, must split a paragraph or end it so that the students will know what the most important ideas in the resource are. Finally, students need to know what they are supposed to learn and do immediately after they have read the description of a task, exercise or activity. Every instruction should be clear, precise and written in plain English. The linear or non-linear arrangement of resources, activities, tasks, exercises or assignments must be straightforward for the course participants. If they do not understand the foundations of the instructional design, they may have problems finding the appropriate information or activity on the course web pages, which can lead to underachievement, partial failure or even a high drop-out rate.

Passerini and Granger (2000) propose a constructivist model for instructional design that can be used by developers of online materials as well as editing tutors. It shows how each phase can be redesigned on the basis of the feedback

generated from evaluation procedures and support analysis (see Fig. 3). The modification process with revisions at each stage, based on summative and formative evaluation (Crooks 2001), should be actively carried out during the course in order to satisfy learners' needs and achieve the best learning outcome.

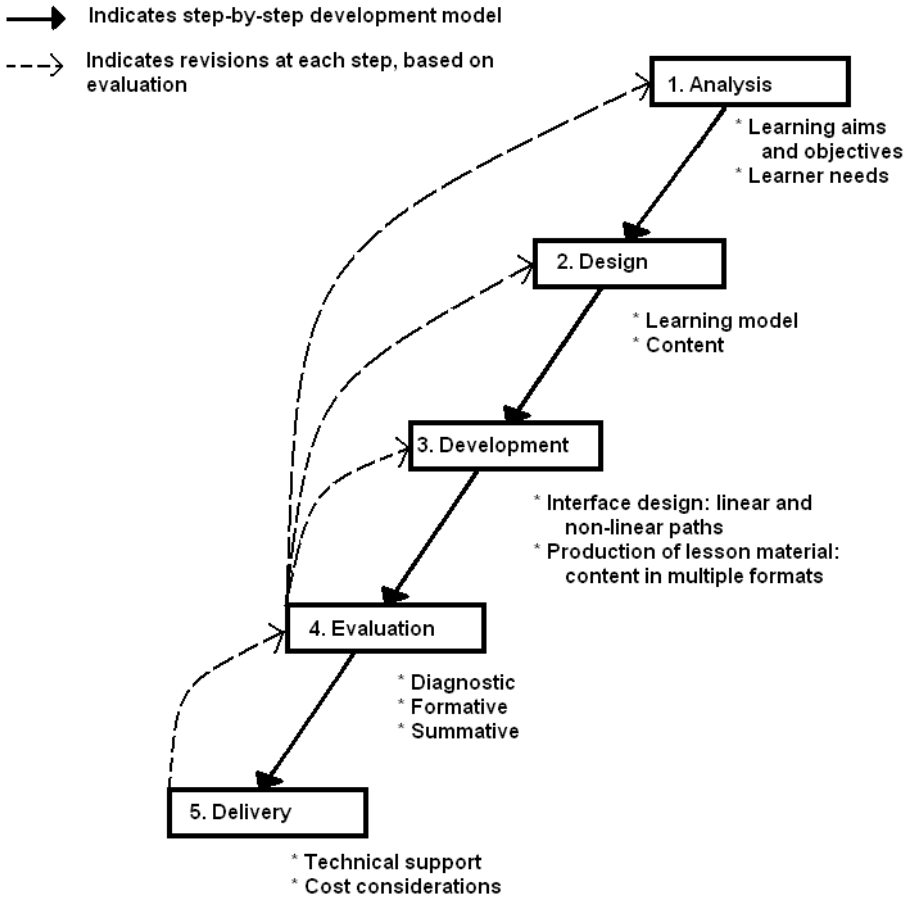

Figure3
Hybrid development model
Source: Based on Passerini and Granger (2000)

According to Passerini and Granger (2000), the first phase, called Analysis, should be devoted to defining learning aims and general objectives of an online course or a blended programme. Needs of target participants have a great impact on that, therefore educators must analyse users' characteristics before stating what the learning outcome is, which in the case of academic writing or technical writing in English does not pose major problems as students of universities, who are a relatively homogenous cohort, are the targeted group. Thus, their needs and requirements are easy to assess and they can be found out on the basis of discussions and surveys.

In the second phase, Design, course developers need to decide in what way learners will be presented with content. They should choose the general structure of online materials, types of activities as well as forms of assessment and their delivery modes. At this stage, the hierarchy of resources and their interdependence must be determined, linear and non-linear paths decided upon, and synchronous and asynchronous technologies selected. When designing resources and educational paths, developers should assume a level of language competence that cohort students should show prior to enrolment, which entails deciding how much freedom of choice students will be allowed. The final product will obviously depend on the budget, proposed by course developers and approved at this stage by decision-makers.

The third phase, called Development, is meant for detailed analyses of lesson plans. During it, educators must decide how to integrate tools or technologies into the instructional design. As Passerini and Granger (2000) point out, 'models that are applicable in the classroom or in educational television are not applicable in the highly interactive environment of the Internet'. That is why, e.g., course content must be divided into smaller chunks that can be used on a modular basis or which can supplement other resources in a blended programme. Because each module of a Writing in English course should constitute a separate, unified whole, it can be treated as a stand-alone entity, to be used when learners'

knowledge in this particular field needs upgrading. Furthermore, in comparison with resources used in a traditional face-to-face environment, online materials which cover similar topics are their shortened and largely modified versions, which focus mainly on key areas and problems. However, unlike traditional resources, they can be frequently updated and extended to include the most important issues. They also offer a range of opportunities for interaction, which keep students engaged in course activities.

In the fourth phase, the programme undergoes evaluation, both summative, which takes place at the end of the production, and formative, which delivers information throughout the whole process. Both types of assessment allow for modifying the content, interface, structure and support mechanisms to make the course more user-friendly. Unlike traditional paper-based materials, online resources can be constantly redesigned on the basis of feedback when the course is in progress. Summative evaluation is provided at the end of an activity, module and the whole programme. It not only assesses the overall student performance but also shows how effective the instructional design is. Formative assessment is used to encourage and motivate students and to aid them during the course. Positive feedback from the tutor provides guidelines which help learners overcome their problems. This remedial action substantially improves their writing. When the tutor knows which language areas their students are struggling with, they can change the design of the course to better satisfy their needs. Due to formative evaluation, certain important features of the virtual learning environment can be improved, that is, navigation, screen design, information presentation, media integration and overall functionality.

During the fifth phase, called 'Delivery', developers must decide what e-learning technologies should be used to design an online or blended programme and how to guarantee the quality of the delivery of Internet- or computer-based resources. If students are required to work systematically in a virtual learning environment, they need to have unrestricted

access to the course website, undisturbed by poor equipment quality, Internet failure, long downloading time or other technical problems. Otherwise, the delivery of instructional design will not be effective and students' motivation to use the virtual classroom will be affected. Therefore, the cost of hardware, software and their maintenance, necessary to assure quality, as well as the cost of technical support, tutoring and management must be calculated at this stage and included in the budget.

Instructional design is a complex process. However, due to its nature, constant evaluation and revisions that take place during course development and when the course is in progress, aims and objectives are met and the learning outcome is better.

3. Aims

According to Wenzel (2001: 96-108), the writing component of a language course aims at either linguistic accuracy or communication or both. The teacher should develop different writing tasks and exercises taking into account the aims to be met. Hence, the linguistic aim dominates over the communicative one at the initial stage of learning the second language. All the writing exercises which students must do at beginner and pre-intermediate levels are designed to improve students' accuracy, whereas language activities learners are involved in at a higher level of competence are meant to satisfy not only the linguistic aim but also the communicative one, which gradually becomes more important. Therefore, teaching the writing skill, which aims at communication only, can take place when students are able to communicate different ideas and express their viewpoints in a coherent way.

When students of technology are asked to write some sentences or a passage in which they must include certain grammar patterns such as tenses, passive voice, conditionals or new vocabulary and fixed expressions, they do not in fact improve the writing skill. They consciously practise the

accurate use of English in some specific contexts. Writing in this case is only a method to increase fluency, similar to gap-filling exercises or paraphrasing, even if, due to such exercises, cohesive strings of sentences in the technical context are produced. When students increase their knowledge about grammar and vocabulary, the linguistic aim has been fulfilled. Such a way of improving the knowledge of technical English can be treated as an introductory step towards mastering the writing skill and is very important at every level of competence. The more advanced learners are, the more consciously they can be engaged in doing tasks which aim at linguistic accuracy (Wenzel 2001: 98-99).

The communicative aim can be fulfilled in two different ways. Students write texts which either simulate communication or are authentic language interaction. Wenzel (2001: 99) calls the former – a "message [...] artificially procured by the teacher", and the latter – a message "genuinely expressed by the students". Both kinds of written production are very important if technical writing is concerned. Practising the first one will result in students being able to write well-structured, coherent texts in the future. If they are required to display such an ability at work, they will be well-prepared. Thus, the communicative aim of a course in Technical Writing will be partially achieved. Presenting viewpoints and describing the results of their research, which is the focal point of the second type of message, enables learners to develop thinking and reasoning skills, which is of great significance if they want to successfully function in workplace settings. If they learn how to conceptualise their own ideas in English, the communicative aim will be fully fulfilled. After completing a course in Technical Writing, they will be more knowledgeable in their field of interest as most of them will broaden their understanding of the subject matter when conducting the research projects necessary to pass module assignments. Thus, another aim, that is, the educational one, will be achieved.

According to Wenzel (2001: 102), the teacher achieves the aim of simulated communicative practice when they ask students to adopt a certain viewpoint and write a description from that angle. For him, such a task is very artificial, because a fictitious situation is not likely to arouse adult students' interest, and engage them deeply in the learning process. As one of the motivational aspects is missing, the learning outcome may be quite poor. The teacher can obtain considerably better results when they advise students to describe a given situation from their own point of view. Such a task involves imagination and creativity and is more authentic.

On the other hand, by practising simulated writing, students have a chance to learn how to produce a well-organised, informative, concise, dense, logical and specific technical text, which belongs to a given genre. Learners can see how a purpose-based writing construction, e.g., a research paper, differs from a technical report, or an abstract from a summary, and that text structure constraints are not very rigid, yet they form certain patterns. The teacher can provide course participants with a set of guidelines, which allow them to understand how to apply genre constraints to the information they want to include in their texts (Mokwa-Tarnowska 2006). Moreover, educators can use simulated writing to assess learner progress during, e.g., a Technical Writing course. For example, they can require their students to submit written assignments at the end of the module, which show how they have managed to develop their knowledge about such technical genres as manual or report. After assessing their work, teachers are able to state how satisfactory the outcome is. As Wenzel (2001: 104-105) points out, artificial writing, such as simulated communicative practice, can aim at the combination of communication with linguistic accuracy. If the teacher is aware of that, the assessment of student progress must show if both aims have been fulfilled. Taking into account only one aim can result in an entirely different impression of student achievement.

Therefore, the right balance of aims and their proper assessment are of great significance.

Unlike artificial writing, genuine writing has cognitive appeal for the student, who, after doing some research, wants to share their opinions and results with the teacher or tutor and fellow participants. If the learning takes place in the constructivist (Vygotsky 1978; von Glasersfeld 1995; Reinfried 2000) or constructionist (Papert and Harel 1991) environment, learners are encouraged to achieve results through co-operation and collaboration (Donelan, Kear and Ramage 2010). By collecting data, analysing them and presenting them in the form of a report or a research paper written in English, students not only develop the writing skill in the second language but they also gain specialist knowledge. Thus, a course in Technical Writing can provide good opportunities for professional training for undergraduate or postgraduate students as well as for continuing education for workers who want to upgrade their skills and knowledge. Wenzel (2001: 101) divides the genres that aim at genuine writing into two groups: those that are related to learning about the world and those connected with the art of creation. Writers of the genres associated with creative writing, that is, of poems, dramas, novels etc., treat the language as "substance, or constructive element of creation". Hence, no technical genre can be part of that group.

Texts within technical genres belong to Wenzel's first group, because they include descriptions of physical phenomena and technological processes, hypotheses on how to solve various scientific and technical problems as well as critical analyses of practice, solutions, equipment and materials. Authors of such written productions verify, falsify, clarify and present new ways of addressing different issues vital for engineers and scientists. These texts have cognitive appeal not only for the writer but also for the reader. One of their great advantages is that they teach reasoning, logical thinking and interpreting. Students attending a course in Technical Writing have a chance to practise genuine writing when they learn how to

write a report or a research paper. They can make use of the knowledge they acquired during classes and lectures run by specialists in their field of interest or when they collected data for projects assigned by faculty academics. They may decide to deepen their understanding of the subject matter in order to successfully complete their end-of-module assignments. In order to encourage course participants to participate in authentic language interaction, the teacher or tutor cannot provide them with ready-made theses, hypotheses or topics. Students must be allowed to formulate them themselves. Educators can only supply detailed information on genre constraints, that is, on the content, structure and ways of editing of, e.g., different kinds of reports and research papers. During the course, they may also give advice on how to write, e.g., well-constructed, cohesive and coherent summaries and abstracts by giving students some practical guidelines (Mokwa-Tarnowska 2005; 2006: 74-81).

To summarise, if the linguistic and communicative aims presented above are achieved, and if the learning environment, either blended, online or traditional, is well prepared and provides good conditions and plenty of opportunities for personal growth and development of language skills, students' technical writing will improve substantially, and their knowledge about different technical genres, the English language, the editing of the technical genres most frequently used, as well as some technological processes and phenomena, will be broadened. Therefore, on the successful completion of a course in Technical Writing in English:

- students will be able to produce a well-structured, coherent and cohesive text, within genre constraints;
- students will become conscious, self-directed learners, who can manage knowledge development;
- students will demonstrate a greater interest in developing their language competence.

4. Objectives

Aims are broken down into various objectives, which are precise, single and measurable (Heriot-Watt University 1999: module 2a). Like aims, they should be written before blended course materials are designed. Without defining them clearly beforehand, course developers may design units and modules which contain too many topics or too much material on each topic or which do not satisfy students' needs. In either case, when objectives are inadequate, course aims will not be achieved. The language in which they are written is very important. It must be easy to understand even for lower-level students. Objectives must focus on what students will achieve during the course, on the successful completion of the tasks and assignments. Therefore, they should be written in behaviourist terms.

Students should be familiarised with both aims and major objectives, that is, those which concern their achievements after passing a module, before they enrol on Technical Writing. The most important objectives should be:

- You will be able to correctly use the rules of capitalisation, spelling and punctuation important for technical writing;
- You will be able to use sentence patterns which often appear in technical texts;
- You will be able to write well-structured, coherent paragraphs;
- You will be able to write manuals and instructions;
- You will be able to produce reports;
- You will be able to structure and write research papers;
- You will be able to differentiate abstracts from summaries and you will demonstrate the ability to write both;
- You will be able to produce memos;
- You will be able to document different sources.

Some specific objectives, which state what progress learners will achieve after doing a task, can be given before students undertake that activity. During a face-to-face meeting, they can be orally presented by the teacher. In an e-learning or blended learning programme, however, objectives should be placed next to the task, on the same webpage or on a separate one if the link to it is distinctive. E-learning and blended learning provide fewer opportunities to meet the tutor in person, that is why everything students are assigned needs to be very straightforward and self-explanatory. When learners understand what they are supposed to do, and what they can achieve at each stage of the course, they can more easily evaluate their progress and assess the learning outcome.

5. Course content

The Technical Writing component can be introduced as a part of a blended course or as a separate course offered to students who are more experienced and knowledgeable, that is, to those who are at intermediate level, because beginner and pre-intermediate students lack the appropriate knowledge of the English language. Although they are able to produce simple sentences and some more complicated compound and complex patterns, which means that they know how to make their sentences cohesive, they are unable to produce coherent passages. Thus, they cannot produce either simulated communicative or genuine writing. Technical Writing as a component or a separate course can be delivered in different environments.

The content of a course in Technical Writing in English should depend on the needs analysis of the students who want to be able to produce technical texts. When a group of learners is homogeneous, that is, their level of language competence is the same or very similar, and they have chosen the same degree programme, the course must target their specific needs and be structured around a field-based curriculum. If a cohort consists of students from more than one year or from different

degree courses, the content must be varied to meet the needs of all of them. This means that the emphasis should be laid on the most significant language aspects as far as writing technical texts is concerned as well as on interdisciplinary research and projects. Students cannot be made to write about fields they do not want to specialise in or topics they are not interested in. They must be allowed to choose the subject they want to investigate or the discipline which arouses their interest. This will motivate them to produce genuine writing. Therefore, course tasks and assignments must be designed in such a way as to allow participants as much freedom as possible in determining the scope of the written work. When practising writing within a specific genre, students should be only familiarised with genre constraints and editing technicalities.

Students who want to write well in technical English need to upgrade their knowledge of different language areas (Mokwa-Tarnowska 2006: 7–53). Firstly, they must understand that a literary work is different from a technical text and so are the capitalisation, spelling and punctuation rules which apply to it. For example, boldface and italics can be used in written works in general English to emphasise, e.g., terms. In technical writing, however, emphasised words are usually in italics, as boldface is used for commands in information technology. In technical English, there are a vast number of compound nouns and compound adjectives. A technical writer must know which of them need to be hyphenated and in which contexts. Equally important is the use of acronyms, abbreviations, titles, numbers and symbols. Secondly, writing well-formed sentences, which results in text clarity and precision in reasoning, should be the prime target for a participant in a course in Technical Writing. Therefore, a learner must understand that, e.g., articles are frequently context-based words, whose usage determines the understanding of a certain noun or a phrase. Students and even academics specialising in science and technology are often confused how to use demonstrative pronouns and demon-

strative adjectives or indefinite pronouns. They do not know in which kinds of technical writing 'one' and 'you' appear, and often replace one with another, which leads to stylistic mistakes. During the course, learners should develop their knowledge about different adverbs and the positions in which they come in a sentence. Technical writers, whose texts must be precise, concise and devoid of mistakes hindering their comprehension and reception, should acquire the ability to write clear and correct sentences. They can achieve this by studying verb patterns which are essential for understanding the art of technical writing, the most important being those which show the verb-verb combination. The passive is quite common in technical texts, however, the active enables writers to produce simpler and more precise sentences. That is why they must know how to balance between passive and active constructions, and avoid complex sentences with a number of passive clauses, as the overuse of passive forms results in an ambiguous and longish passage. Students should also learn how to join sentence structures by using coordinating and subordinating conjunctions. One of the most important things for a technical writer is to understand the difference between defining, non-defining and connective relative clauses as well as the punctuation rules that apply to constructing them. If students develop their knowledge of the language areas mentioned above, they will be able to write cohesive sentences and the linguistic aim of the course will be fulfilled.

In order to achieve the communicative aim described above, students must learn how to link correct sentences to each other, and how to add data and calculations to create a coherent paragraph (Mokwa-Tarnowska 2006: 59–68). They should practise writing topic sentences and developing them. By inserting a topic sentence near the start of each paragraph, the writer helps the reader to understand what the passage is about. In order to become more skilful in technical writing, course participants need to learn how to insert mathematical expressions, figures, charts and tables into the text and how to describe and analyse them in English.

The communicative aim can be satisfied through both genuine and artificial writing, that is, through engaging course participants in activities leading to the production of various kinds of technical texts. During a course in Technical Writing in English, students should practise applying genre constraints to the information they want to convey. The genres students should become familiar with are those which they use during their university education, and which they may use at work (Mokwa-Tarnowska 2006: 72–105). Hence, they need to learn to write manuals and instructions, which are either self-contained documents or parts of scientific reports or other technical texts. They must know how to structure a business report or a research report in order to include the objectives, methods and findings of the study, and how to make it unbiased, logical and clear. Moreover, they need to learn how to present the topic they explored in the form of a research paper. This kind of technical writing will allow them to show their expertise and personal insight. Practising writing analytical and argumentative research papers in English will make them be able to produce professional texts in Polish as well. Summarising passages or papers will enable students to skilfully group the key areas or arguments. By doing this, they will acquire the ability which is indispensable in presenting somebody else's point of view. A great majority of undergraduate students of science and technology have no knowledge about what sort of writing an abstract is. Even academics who do scientific investigations and experiments, and who are experienced technical writers, sometimes have problems producing a condensed descriptive or informative abstract. Therefore, course participants should practise writing both kinds of abstracts. Finally, students can share their opinions with fellow participants by sending them memos, which is the most basic form of communication among company employees. If students are unfamiliar with the structure and style of covering letters, CVs and resumes, these kinds of texts should also be included in the course curriculum.

After completing a course in Technical Writing in English as presented above, students will demonstrate various skills, not only linguistic but also analytical, organisational, communication and study. They will be able to write better in English and their level of language competence will increase substantially. Writing can be a powerful tool in the acquisition of the second language as well as an efficient way of teaching creative thinking (Wenzel 2001: 108).

6. Broad lesson plan

When course developers want to design an effective blended learning programme, which can be launched several times or which can be implemented by a few tutors, who do not have to be very experienced in running online courses, they need to prepare a broad lesson plan linking online and face-to-face activities (Littlejohn and Pegler 2007: 83-93). This plan should inform the tutor about a general timing scheme, which timetables the introduction of both traditional and e-learning resources, activities and assignments. It must also contain the description of both tutor and student roles in the educational process so that particularly tutors who are less experienced in e-learning can appropriately and efficiently blend the content and activities as well as engage students in learning. Resources and activities should only be enumerated in the plan, a detailed account of what they involve is not necessary. It is essential, however, to state the mode they are in. Another important thing is to give the purpose of their inclusion in the course. This means that it should be made clear what each module or resource or group of activities aims at. In order not to produce too complicated plans with longish wording, aims and objectives must be written in simple English and should refer to as many entries as possible. It is necessary to specify detailed objectives, though. This may help both students and a relatively inexperienced tutor to run every activity and manage every resource, especially those developed in an e-learning environment, accordingly. The plan must include

courseware to be used during the educational programme. All e-learning applications need to be enumerated next to the activities and resources for which they are meant. Finally, it is necessary to show the most important feedback structures, that is, support mechanisms that come from the tutor and peers, as well as the forms of assessment suggested by course developers.

Such a pattern, which documents how traditional face-to-face teaching is blended with e-learning into a comprehensive educational programme, where aims, objectives and the general structure are presented, together with what different blends within the education process involve, is a quick overview of a teaching and learning scenario (McAndrew 2004). It can also be regarded by educators who want to design new blended learning projects as a starting point for developing other blends (Littlejohn and Pegler 2007: chap. 5).

A redesigned version of a relatively detailed lesson plan developed by Littlejohn and Pegler (2007: 82-133), called LD_lite, which was derived from different international studies, is shown in Figure 4. This framework takes into account the context of learning with its most important elements, which show the key areas that every developer of blended programmes must consider before launching any course involving the use of e-learning technologies which are to supplement traditional face-to-face activities. Although this scenario can be of great advantage to beginner developers of blended programmes or inexperienced tutors, in Littlejohn and Pegler's opinion (2007: 85-87), it has some drawbacks. Its matrix structure is useful for showing linear sequences of activities but it cannot document those which are non-linear or non-sequential, such as problem-based learning, where tasks can be subdivided into simultaneous activities. It also does not give the educator an overview of each lesson, which is left for further developing if necessary. Moreover, the plan does not allow a full understanding of learners and their needs.

Time	Mode	Tutor roles	Student roles	Resources (content)	Resources (courseware)	Aims, Objectives	Feedback Assessment
Week 5	Online	Introduce students to the module	Review the module, download, read sample texts and information	Texts in the module, links to sample texts	VLE - Moodle	Students will understand the structure of a report.	Feedback from tutor
	Online	Moderate discussion, post feedback to discussion board	Group discussion, members summarise their findings	Posts to discussion board (summaries, comments)	Discussion board	Students will be able to work collabora-tively.	Feedback from tutor and peers
	Online	Monitor progress, post feedback, send encouragement	Do exercises	Exercises on course webpages	Moodle quizzes	Students will improve their knowledge of vocabu-lary and genre constraints.	Feedback from tutor, system generated marks
	Face-to-face	Moderate discussion, offer feedback	Group discussion on problem areas			Students will deepen their under-standing of the genre.	Feedback from tutor on reports to submit
Week 6	Face-to-face	Offer feedback	Analyse feedback	Submitted reports		Students will be able to produce a report.	Feedback from tutor, assessment

Figure 4
Writing a report – lesson plan linking online and face-to-face activities. Source: based on Littlejohn and Pegler (2007: 86)

7. Summary

Blended learning is not about supplementing traditional face-to-face sessions with as many e-learning technologies as possible and is not about delivery channels. The most important thing is to effectively blend classroom activities with new tools for pedagogic gain. This means that developers

should focus on implementing the best possible ways of introducing the course content and on the most successful methods of stimulating learners. Their decisions should result in greater student engagement in the educational process.

Teaching students how to write technical texts can be conducted in various environments. A blended course with an online component may provide them with more versatile ways of practising the writing skill than the traditional classroom. The forms of written interactions possible in the VLE motivate students to engage in learning more actively. The tools offer them opportunities to develop knowledge through interaction and support structures, which can be easily modified to satisfy their needs. Such an environment allows for a learner-centred approach to gaining the necessary skills for technical writing.

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