Course Design for Web-based Blended Learning

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Abstract: The paper deals with some pedagogical issues raised at the application of the constructivist educational ideology to language courses in web-based blended learning at university level. It presents a description of English for Specific Purposes (ESP) course design at two levels. At the first (macro) level, the goals, indicative content, envisioned outcomes, forms of learning and teaching, and the assessment are described. At the micro level, sample elements of the course corresponding to the model are presented. The course design was realised on the basis of specially developed model, which builds upon constructivist approach to learning and the existing good practices in Bulgarian higher education.

Key words: Constructivism, technology-enhanced language learning, web based learning, blended learning, instructional design.

INTRODUCTION

The VEHICCLE model ("(for Vocational purposes) Electronically enHanced InterCultural Communicative Language Education") [1], is based on the recognition of the changes in both theory and practice of education towards more personal approach to the learners, and setting their skills for lifelong learning and team work for building knowledge. What was considered was a number of papers, which generally support the constructivist pedagogy and describe pedagogical issues, models of e-learning, and course design [2- 7] in different contexts.

This paper focus is on a course design based on the VEHICCLE model which was suggested as a solution for enhanced efficiency of using the existing resources (human, equipment, time) in order to meet the demands for achieving higher quality at a lower cost. The first part of the paper goes in depth to describe the two levels [9] of the design: the macro level (the objectives, learning outcomes, forms of learning and teaching, and assessment) and the micro level (the content of the model elements when applied to the particular course design). The second part of the paper presents the results of a summative course evaluation to measure student attitudes towards the design. The summary of the findings and an outline of the future work comprise the last section.

COURSE DESIGN BASED ON VEHICCLE

VEHICLE defines the components of web-based language learning, thus allowing for transforming existing curricula and materials for online use; based on the best practices [10-15] and established university standards in Bulgaria [16]. The communicative approach to language learning was applied with regards to the communal constructivist paradigm, which is regarded as the one to meet the demands of the complex situation of teaching languages in Bulgarian higher educational context [17, 18]. Based on these results and student suggestions [17], the course design was improved in order to ensure collaboration and exchange of knowledge among the students, and to boost their performance.

Macro Level of VEHICCLE Course Design

The course is compulsory; semester – 1, 2 (first year of education); Specialty Informatics at Faculty of Mathematics and Informatics, Sofia University. The administrative groups consist of 20 students on average; mixed-ability level of proficiency in general English, and no experience in e-learning. The learning process is arranged in 60 hours of face-to-face collaboration in computer labs or traditional seminar rooms, and unlimited collaboration and online support in the virtual learning environment (VLE) Moodle.

The objectives were to help students to understand the possibilities of information and communication technology (ICT) in language learning. The emphasis of the course was on providing students with means of improving their level of English through a personalized approach by combining this study with their computer skills. It focused on developing practical skills in making presentations, summarizing information critically, writing academic papers, introducing the standards for writing academic text in English. It also aimed at raising student awareness on terminology and its use in both spoken and written form. Next dealt with ways in which all these skills and knowledge might be used to enhance professional effectiveness.

The learning outcomes were set towards: awareness on the roles and possibilities of ICT in language learning; competence in ESP (ICT and mathematical terminology); skills: to use Web-based sources of information to study; to make presentations, summarize information, write academic essays; to use English to enhance professional effectiveness.

The indicative content consisted of: Use of the World Wide Web as a language resource, reliability; Principles of using terminology: Glossary of IT and Mathematics terminology; Summary writing; Academic papers: format, plagiarism, citing (standards); Presentations. The forms of learning and teaching were a flexible combination of face-to-face classes and online collaboration (synchronous and asynchronous) on topics and papers (individual and team work, project work). During the seminars the students practiced their productive skills through discussions, comments, glossary compiling, paper writing and formatting. Discussions on various topics were conducted, based on topics from a course book, or suggested by the students themselves, within the general subject of informatics and mathematics. Glossary compiling was introduced as a concept and a task on producing a glossary on a freely chosen topic (connected with mathematics and informatics) was carried out. Students were presented with the pros and cons of using the Internet as a source of information, thus developing soft skills [4] for searching for information and assessing its reliability. They were also guided through the process of academic writing by web-based instructions; through mini projects: to collect and summarise original texts of their own interest and effectively collaborate in task-solving and decision-making. Other practical skills were expressing orally (formal and informal mode, dialogue and monologue), acquired through discussions and presentations.

The assessment was arranged in three categories, related to the goals of the course: oral communicative skills for vocational purposes (presentation) comprise 40%; another 40% depended on the academic writing; and 20% were for class participation (quality postings in the forums to solve the tasks, critical peer-reviews, etc.). The mark followed the widely accepted scheme 81(and above)% - Excellent; 71-80% - Very Good; 61-70% Good; 51-60% - Pass; 50 and less – Fail. Thus the assessment complies with the Bulgarian higher education assessment scheme, and reflects the constructivist idea for criteria-based evaluation. The criteria were established and set in advance, and related to the skill. For example, the set for the presentation were based on the European Common Framework for Languages for speaking: monologue speech (clear and concise flow of speech); dialogue: asking and answering questions on the topic; discussion skills; presentational skills (e.g. body language, voice, eye contact). It is evident, that the assessment was a complex procedure, taking into account the effort and results of development communicative skills, requiring cooperative work and shared responsibility, as well as depending on the peer opinion and participation in the team activities. Therefore, as suggested by the constructivist ideology, what was assessed was not only the result of the learning, but the process of learning as well. Such a system proved to be well-received by the students [19] as giving sense of development and accomplishment, and preparing them for being assessed in their future classes and job-related situations.

Micro-level of VEHICCLE Course Design

The course design based of the communal constructivist approach is a flexible structure; not fixed in advance [20] but rather constantly adapted to the students' needs, background knowledge and skills, and constantly re-designed by the students themselves in order to "create knowledge with and for the others" [21]. Thus the model discussed above can be viewed as scaffolding for the course design, with closely interrelated and interdependent elements. Therefore, the description of the micro-level of the course design follows the elements of the model as identified above [1].

The Module is the main structure of the model describing the process of learning. It contains a number of elements, which may vary in contents and number from module to module, and may describe procedures of different length. For example, the introductory module of the course under discussion contained instructions on how to use the course site/ the VLE, teaching materials to test the main features of the environment, and some immediate feedback and support in order to assist all students to get acquainted with Moodle. The instructions were basically of two types: the first type contained a unit, devoted to a topic (based on a course book; on good practice; or student-generated); and the second – directions on "how-to" concerning the academic paper writing. The flexible list of topics started with classes on Netiquette, Searching Engines, What is information?, which proved to be essential for introducing students to online collaboration, in turn crucial to their effective study in a blended-learning mode. The typical instruction list contained: information on the specific goals of the current class; a brainstorming part – a question to elicit background information on the suggested topic; some collaborative or pair tasks, mainly containing links to materials, available online or from the Repository; homework, or self-directed work (related to creative thinking, other's work assessment, or additional reading); post-activities to share and discuss the results of the homework; suggested further reading links to stimulate deeper investigation on the topic. Normally, the brainstorming was done in a face-to-face communication; the tasks were a mixture of face-to-face communication and collaboration online, ending with a posting in the respective Forum; and the homework and post-activities were a topic for face-to-face or online discussion in dependence on the importance of the topic or the student interest in it.

As a study showed [19], fixed content of the course in the field of information technology terminology were regarded as outdated, thus not interesting for the students. Therefore, the teaching/learning materials were an open collection of previous year's assignments; topic-related lists of links to websites, articles, videos, etc.; and materials, developed or suggested by the students themselves. They could be divided into core materials (such as instructions for the class, with links to basic information on a given topic to be read/ listened to); and additional materials (further reading, presented as a list of links or as tasks for searching for external sources). Examples of teacher-developed core materials are PowerPoint presentations (e.g. "Writing Academic Paper", "Online Dictionaries"); handouts with the instructions and links; a website for the course containing the Repository with all handouts, a calendar, forums, contacts, etc. Different modalities (types of multimedia and available technical solutions) were explored in order to facilitate learning for students with different learning styles and abilities. The accessibility of the materials was ensured by being uploaded to the online Repository (adapted for blind students) and linked to the web-based course. All the materials in the Repository were described in a LOM-compatible interactive template [21], specially developed for the VEHICCLE Model.

The self-assessment was based on different tests, supported by Moodle plug-ins (e.g. a Hot Potatoes close test to fill in terminology discussed during the classes), comments on the teamwork on the assignment, as well as peer-reviews of the postings for the tasks from the instructions.

The feedback and the assessment were commissioned by all students and the teacher/facilitator using all modalities of computer mediated communication. For example, peer-reviews were issued for the task postings in the forums; personal messages and e-mails were sent to the students at different stages of assignment development to suggest changes and improvement. The process of giving and receiving feedback from the peers was rarely monitored, which gave the students the relative freedom to express themselves in a less threatening atmosphere, negotiating meaning and arguing for and against a statement.

The assignment (the academic text and the presentation) is the product of the learning process, and is the other main part of the model [1]. The preparation was partially a classroom activity (especially at the stages of selecting information, and planning the draft), and partially a team or individual work out of class; either way guided and facilitated by instructions. The topics of the assignments were chosen by the students, on the condition that they did not repeat and were in the field of Informatics or Mathematics. The importance and relevance of the topic to the course goals had to be proved. Students also decided who their team would consist of, how to divide the work within the team, and when and where to work. Clear assessment criteria and requirements were set in advance.

All of the elements were situated in the web-based learning environment (Moodle in this case) or linked to it (the course website). The main functions of the online environment were: to inform about the course goals, instructions, topic choice; to make materials and relevant external sources available; to allow for course management, through monitoring and guidance; to provide a calendar for the deadlines and forthcoming course events; to facilitate communication, both synchronous and asynchronous, among the students, and with the lecturer; as well as to ensure feedback and peer-support.

As a whole, the elements of the micro level of the course design were arranged to support the macro level. As made clear during the description above, all stages of the learning process and product development rely heavily on both face-to-face and computer-based communication, as illustrated by VEHICLE. Another important feature of this course communication was that it was purposeful: the target language was used to solve real problems during the team tasks. Thus a student dominated and initiated use of the target language as a medium was ensured.

SUMMATIVE COURSE EVALUATION
In order to pilot the new design, a series of experimental ESP courses were introduced between 2005/2006 and 2008/2009 academic years. The current summative course evaluation is part of continuous investigation aiming at course design improvement [18, 22] and was carried out to collect feedback from the students. The tool used to collect data from the students was a web-based questionnaire, based on the free version of Survey Monkey[5]. The questionnaire consisted of four categories questions: bio-data questions, questions investigating student attitude towards the course design, questions measuring student motivation, and an open question. Due to the limited volume of this paper, this analysis is based on the quantitative questions concerning the course design. The scales used for the closed questions are standard Likert's scales (5 and 7-graded; neutral point at 3 and 4 respectively).

The questionnaire was filled in by 42 of 76 students who completed the course. 30 of the students were male and 11 female; average age 19.75 years. The student perceived level of English was high: 43% declared language competence at C1[6], 40% at B2, and 9.5 % (4 students) at C2. The average participation is between 7 to 10

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classes (of 12).   Completed responses were received by 41 students comparing the web-based course to a traditional one, and 39 concerning the course as a whole.

Table 1 presents the data received to 7 questions. Three of them required comparison between traditional and web-based classes and used a 5-grade scale. It is evident that the students opinion on all three aspects was above the average point, which speaks that they find the web-based course as more interesting, easier to cope with, and more useful with mean values at 3.7, 3.6 and 3.4 respectively. The median cases for the interest and ease score 4, and the 75% case is at 5, which confirms that the students feel much more involved and relaxed during the web-based courses.

Next three questions elicited similar responses: students find the course as a whole very interesting, useful and adequate to their needs. In this wording of the question the usefulness received mean case at 4.5, which is well above the neutral point (4); median at 5 and 75% case at 7, which is slightly higher than the same issue rated in the previous discussion. This can be a sign that the students were not totally convinced as to how useful indeed was the course, although they agree that it was useful.

The last question to discuss here is to what extent students were satisfied with their performance and achievements as a result of the course. It is clear that their confidence was stable and above the neutral point (4), reaching median case value of 4.9 and mean of 5. The 75%case at 7 speaks that most of the students feel positive about their results.

Table 1. Student opinion about the web-base course

In comparison to the traditional classes are: *(rate from 1 to 5)* case 1-41	more interesting	more useful	easier to cope with	The course was: *(rate 1 to 7)* case 1- 39	very interesting	adequate to my needs	very useful	I am satisfied with my achievements *(rate 1 to 7)*
MEAN case	3.7	3.4	3.6	**MEAN case**	4.2	4.3	4.5	4.9
MEDIAN case	4	3	4	**MEDIAN case**	5	4	5	5
75% case	5	4	5	**75% case**	5	5	6	7

CONCLUSIONS AND FUTURE WORK

The course design presented here is an attempt to apply contemporary theory and practice to the Bulgarian higher educational context in the area of language learning. The description is by no means an ultimate solution or recipe for designing ESP courses for blended language learning. Yet, it contains suggestions on how some issues could be dealt with in order to comply with the varied student needs and to make the classes more interesting, useful, and easier for the students, bringing self-confidence to them.

As it was mentioned earlier, this paper discussed the evaluation of the course based on the closed questions about course design only. In order to provide more detailed information and proof of the results further analysis of the collected data on student motivation and the open questions needs to be provided.

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