Distance Learning Course on Business on the Internet: Some Implementation Issues

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Abstract

This paper describes an experiment of a distance learning course on Business on the Internet delivery using the World-Wide-Web (WWW). Special attention is paid to the opportunities offered to the tutors to build their own flexible teaching strategies by combining different teaching methods, models, and activities. The virtual learning environment of the course offers a lot of flexibility to the students as well. The effectiveness of the course was assessed by evaluating students achievements.

1. Introduction

The telematics based distance learning course on *Business on the Internet* is developed at the Department of Information Technologies, Sofia University, in the frames of a global project for establishing a *Virtual Environment for Distance Education and Training* (VEDET). VEDET consists of a number of virtual establishments such as: virtual university; virtual school; virtual enterprise; virtual language learning centre; virtual library; virtual publishing company; electronic market for educational goods and services; etc[3, 6, 7, 8, 10]. When delivering distance learning courses both learners and tutors *inhabit* VEDET where people from different locations can meet, interact, learn and work together, as if they were face-to-face.

The *scenario* for delivering the *Business on the Internet* course includes the following components:
- registration - apart from an especially prepared application form the applicant fills in relevant diagnostic instruments.
- introduction - the tutor introduces himself to learners, present the course outline, timetable of activities, evaluation criteria..
- *break down of ice* - the tutor *invites* the participants in the virtual auditorium and initiates a mutual introducing to each other.
- announcements - the tutor announces where and how the learners can find available the learning resources attached to the course, e.g. in the virtual reading room, in the virtual library, in their personal virtual learning environments (the client part of VEDET) and also announces the place, the time and the topic of first working seminar.

Further the tutor is offered to *build* his/her own teaching strategy by combining different teaching methods, models, and activities, e.g. :
- social interaction models[12];
- models based on the information processing metaphor[1];
- personal source models - Master Performer Approach[4];
- models after Romiszowski: expositive or discovery classroom instruction, individual tutorial or group tutorial, seminar, workshop, open group

discussion, resource-based and project-based learning systems, programmed self-instructional methods, the TWI method, instruction by example: demonstration, illustration and modelling, classical and operand conditioning, simulation techniques, case study method, role-playing, instructional games and simulation games[10];
* group dynamics methods (brainstorming, laboratory training).

Thus each tutor *constructs* (similar to using Lego bricks) his/her own unique instructional design model by taking into account the individual characteristics of learners and problems being solved.

2. General Course Description

2.1. Course objectives

The course aims at helping students to learn how to set up a business on the Internet and how to use Internet for their business - for communication, sales, marketing, research, human resource development and customer relations. The main goal of the course is to encourage students to set up their own learning direction, and to give them more control over the learning process. The final projects serve as the most valuable output from the course. Students should demonstrate their ability to use specific skills and to participate in discussions.

As a result of this course, students should be able to:
* apply methods for selling products and services on the Internet.
* evaluate the quality of services and products offered on the Internet.
* develop tools, methods and procedures for Internet business presence;
* do marketing research on Web;
* set up and use Intranet solutions;
* establish new business relationships such as links with clients, banks, other companies, etc.

2.2. Course structure

The above mentioned principles and goals were used for designing the Business on the Internet course. It consists of a set of WWW pages and tools with a consistent layout template and uniform design metaphors that define a *customised virtual learning environment*. The course learning environment allows users (tutors and learners) to easy navigate and communicate. There are two main parts of the course:
* *introductory part* – describing the overall course structure and learning methodology;
* *study part* – providing resource materials and supporting learning according to the model chosen.

The introductory part includes the course home page, introduction to the course, course outline, course micro-planning, evaluation and statistics, course demo, authorisation (see fig.1). The study part consists of the course units containing the following sections: lecture notes, guest lecturers, tests, questions, case studies, essay, resource bank, discussions (see Fig.2) The *learning activities* are designed according to the specific course objectives.
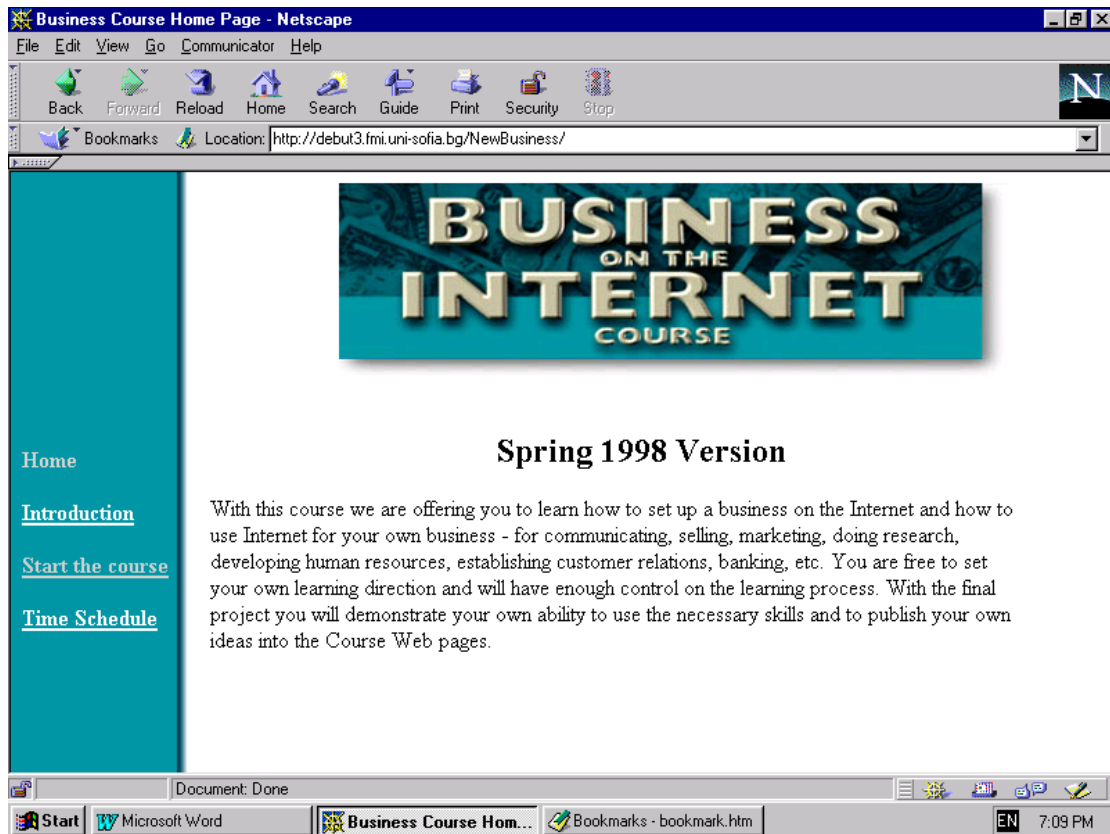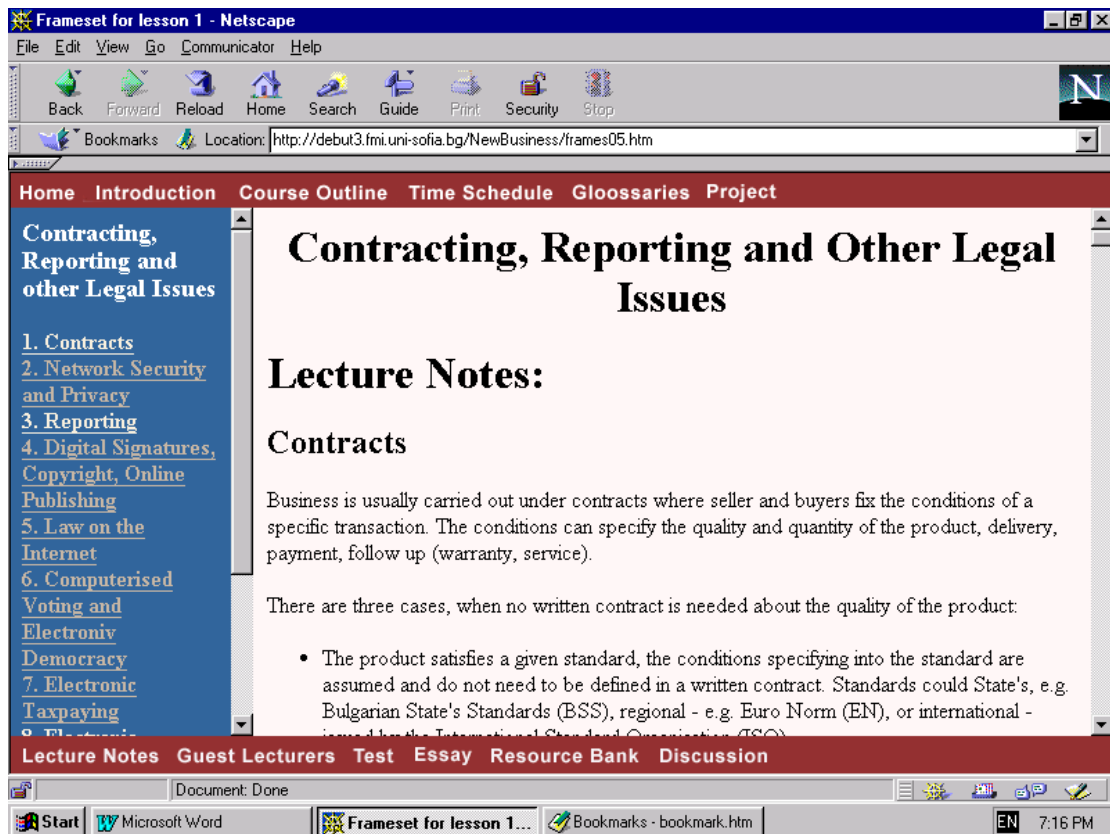
Fig. 1

Fig. 2.

2.3. Course content

The course content is divided in six main modules:
- New Information Society
- Business Background
- Technological Background
- Advertising and Marketing
- Settlement and Logistics
- Contracting, Reporting and Other Legal Issues

The first module provides a general perspective and trends in the modern Information Society and introduces a number of key notions and terms. Special attention is given to the significance of distance education and electronic commerce. The second and third modules provide the business and information and communication technology (ICT) fundamentals that have to be learnt before going further in the subject area. They put attention mostly on some key points, recent developments and ideas in these fields and stressing on the practical aspects on the using the Internet and Business models. The assignments allow students to further collect, explore and analyse Internet resources in these fields.

The last three modules are the core of the course. They cover topics related to:
- applying ICT to business activities inside the company (Intranet solutions) - corporate communications, human resources, education and training, administration, financing, manufacturing, customer services and support, goods and materials, etc.;
- applying ICT to business activities outside the company (Internet solutions) - advertising and marketing, banking and payment, stock exchange, selling and buying, legal issues, etc.

Heavy accent is put on the practical aspects of the matter. The assignments and especially the course projects require intensive and active work by the students. They have the possibility to check by themselves the power of electronic marketing and advertising and the utility of electronic payment and settlement.

3. Pilot Implementation

3.1. Course target group

The *course target group* for its pilot implementation involves MSc students in Information Technologies and Systems at the Faculty of Economics and Business Administration of Sofia University "St. Kliment Ochridski". The students have the following background:
- Courses in Business Administration:
  - Introduction to Management
  - Organisation Theory
  - Human Resources Management

- ♦ Quantitative Methods in Management
- ♦ Accounting Principles
- ♦ Corporate Financing
- Courses in Informatics:
  - ♦ Introduction to Practical Informatics
  - ♦ Management Information Systems
  - ♦ Modern Information Technologies in Management
  - ♦ Telematics and Business Applications

Typically these students have a solid academic background, moderate practice in using the Internet and lack of real business experience.

3.2. Teaching Materials

The teaching materials provided contain a *teachers guide* and a *students package*. The teachers guide deals with the methodology for distance learning. As a lot of aspects of distance learning derive from the traditional education, the guide puts more attention on the specifics of distance learning and particularly on the use of ICT as instructional media. The guide also describes activities which have to be performed during the development and implementation phase. The student package contains a description of all resource learning materials, their URLs, and hard copies of some of them. The following types of Web based resource materials are prepared:

- catalogues of business and economics Web sites (Universities, Educational Centres, Government institutions, Companies, etc.)
- electronic libraries containing electronic papers and books as well as a set of business cases to be studied by the students.
- two printed books which could be used as students' readers.

The Internet resources are carefully structured according to the course outline and linked with other relevant electronic libraries and sources. This makes possible to easier develop and enrich the collected set of resources and to adapt it to different teachers and students needs.

3.3. Course Delivery

The course is based on a combination of lectures, student presentations, self-learning, project work, and case study based discussions. It comprises of teaching materials (lecture notes, guest lectures and additional resources) organised in modules and learning activities (tests, essays, discussions, projects) focused on the content of each module. The *lecture notes* give the basic knowledge on every module's topic and contain links to *additional resources* which broaden the student's understanding. Valuable information is provided also by the *guest lecturers (*prominent experts in the field), who are *hired* simply by including hyperlinks to their materials on the Web or by scheduling their on-line and asynchronous presentations. Students have opportunities to learn from the *best practice cases* available on the Internet and to establishing their own learning agenda. Each student have opportunities for immediate feedback. The students are assigned as *experts* in a particular areas such as marketing, finance, selling, and advertising, and asked to develop their own personal presence on the WWW. Regular assignments based on short cases are announced throughout the course. Regular self-evaluation tests for each topic are also offered.

The students have on their disposal a set of projects they can work on, apply their professional experience and shape out their learning experience. All projects require group work and network communication via hypermedia documents, as well as designing and implementing such documents. The students can learn at their own pace. Web course materials and online interactive sessions are stored and later made available for further use in classes.

According to the outcomes of the learners diagnostic instruments and pre-tests each student is offered selected readings from the course virtual library. They also have the opportunity for free exploration using the resource banks attached to each unit as well as the course library. The students have on their disposal on-line examination study hints with hypertext links to important course materials. Thus both students and tutors are offered an opportunity to actively work and learn together. As the subject covers a fast developing area all study part components are supposed to be refined during the course by the student teams supervised by the tutors. A number of topical Web conferences are open and the students are invited to come up and discuss specific problems, case studies or proposals. Some on-line discussion groups are formed dynamically and some students are assigned to lead off these discussion. Experience exchange and group learning are achieved by *discussions* initiated and guided by the tutors. Private correspondence among the students, tutors and experts is also encouraged.. Students are given the opportunity to present their reports and projects and publish them on the WWW. Quizzes and tests given in each unit allow students to measure their own progress and mastery of the course components. The assessment of the achievements of each student is formed by the results of their assignments of the modules (55%) and the project assessment (45%).

4. Course Effectiveness Assessment

4.1. Assessment Instrument

In order to assess the effectiveness of the course an assessment test instrument was developed. It consists of two parts - *pre-test* and *post-test*. The pre-test aims at qualitative measurement of the student's preliminary knowledge in the field. The basic terms for every module are extracted and mixed into a test form containing 43 elements. Some of the notions are related to more than one modules. The students are invited to self-assess their acquaintance with every term on the basis of five-degree qualitative scale - fail, fair, good, very good, excellent (or 2, 3, 4, 5, 6 points). The goal of the post-test is to assess the students progress in understanding the basic terms and notions. Since it is based on the same set of terms as the pre-test the results can be easily measured and analysed.

4.2. Analysis of the Results

To compute the relative progress we calculate the difference between the post-test and pre-test results and find the average across the students and questions related to the different modules. The results show relatively good student progress in all topics (the Total Average is 1.836, which is almost two full points). The smallest progress is registered in the Business Background Module (1.5 points) which is expected because

of the background of the students – all of them have a Bachelor Degree in Business Administration. The highest progress observed is in the field of Business on the Internet Legal Issues (2.375) - a field containing a lot of new emerging problems and challenges. The results of the rest of the modules are in the 1.69 - 1.84 range. Average progress is illustrated on Fig.3. We can conclude that most of the students recognise significant positive effect of their participation in the course.
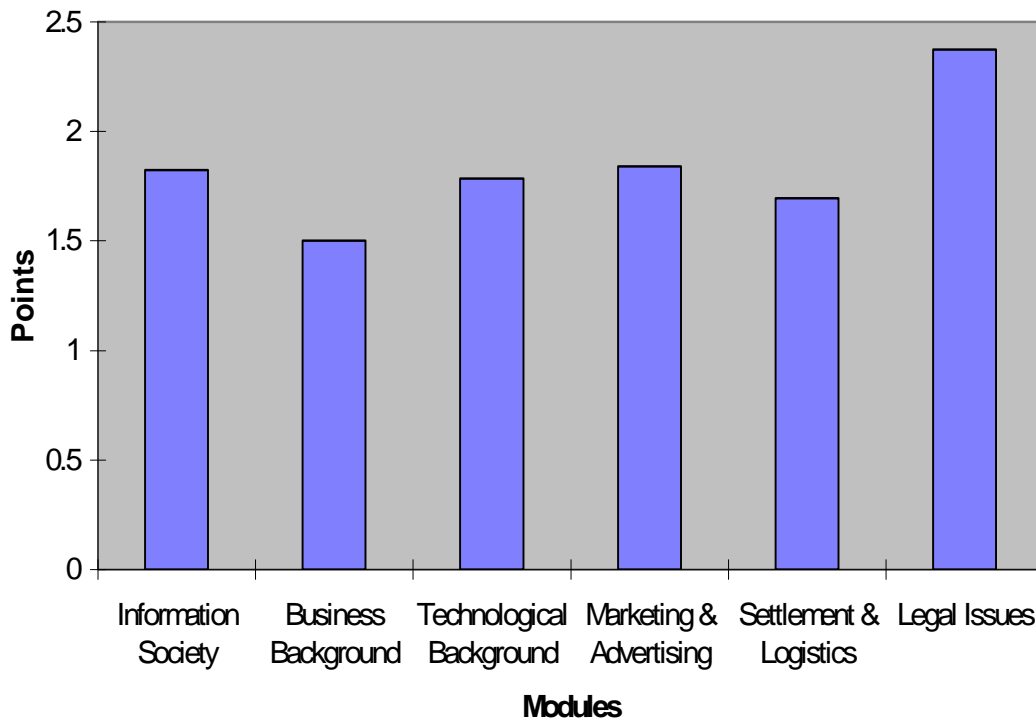
Average Progress

Points

2.5

2

1.5

1

0.5

0

Information Society | Business Background | Technological Background | Marketing & Advertising | Settlement & Logistics | Legal Issues

Modules

Fig. 3.

5. Conclusion

The main direction for further work is related to development of a model of a virtual enterprise and better integration and of all VEDET components. An important direction for instructional strategy improvement include adoption of a paradigm for individual learning styles. The course virtual learning environment should automatically enable the learner to identify himself with one of the four basic learning styles proposed by Honey and Mumford[5], and then to choose the appropriate content structure, learning activities and way of navigation for that learning style. Other interesting idea is connected with the broader use of different types of multimedia information (audio, live video, synchronous videoconferencing, etc.). One of the most importing ways of future improvements of the template is connected with developing WWW based course design tools[9] and database registration and accounting systems, enabling more sophisticated ways of collaboration and group support activities. The inclusion of closed tests is considered as well. This can lead to a higher degree of automation of the assessment process. The best results of the

students projects can serve as a base for development of case studies illustrating and complementing the existing teaching materials. Development of appropriate business multi-actor simulation games is also envisaged which will lead to more active involvement of the students.

The Department of Information Technologies of Sofia University has already started a procedure for its programmes and flexible courses re-engineering in order to provide them to a broader audience via VEDET[13].

Acknowledgements

References

[1] ANDERSON J.R. (1983). The Architecture of Cognition, MA: Harvard University Press.

[2] COLIS, B. (1996). Tele-learning in a Digital World: The future of distance learning. London: International Thomson Press.

[3] DICHEVA, D., Djakova I. (1997). Interface Metaphors: the Case of a WWW-Based Distance Learning Business English Course, IFIP WG3.3 Working Conference "Human Computer Interaction and Educational Tools", Sozopol, May 27-28, to appear.

[4] GILBERT, T. (1978). Human Competence, Academy Press, San Diego.

[5] HONEY P. & Mumford A. (1992). The Manual of Learning Styles, Peter Honey, Berkshire, UK.

[6] NIKOLOV R. & Nikolova I. (1996). A Virtual Environment for Distance Education and Training, IFIP WG3.6 Conference "Collaborative Learning and Working with Telematics", Vienna, Sep. 2-4

[7] NIKOLOV R. & Stefanov K. (1997), A Virtual Environment for Doing Business on the Internet, Proceedings of the IFIP WG3.3 Working Conf. "Human Computer Interaction and Educational Tools", Sozopol, May 27-28

[8] NIKOLOV, R., Stefanov, K, Popova, V., Koprinkov, G., Tzolov, T. (1997), VEPH - a Virtual Electronic Publishing House for Distance Education, Proceedings of the 8th International PEG Conference "PEG'97: Meeting the Challenge of the new Technologies", Sozopol May 30 - 1 June

[9] NIKOLOVA, I. (1996) Design of a Method for Flexible Instructional Modules Development, MSc Thesis, University of Twente, the Netherlands

[10] ROMIZOVSKI A. J. (1981). <u>Designing Instructional Systems</u>, Kogan Page, London.

[11] STEFANOV, K., Stoyanov, S., Nikolov, R.(1997), Design Issues of a Learning Course on Business on the Internet, <u>Proceedings of the 8th International PEG Conference "PEG'97: Meeting the Challenge of the new Technologies"</u>, Sozopol, May 30 - June 1.

[12] WEIL, M. & Joyce B. (1978). <u>Information Processing Models for Teaching,</u> Englewood Cliffs, New York: Prentice-Hall.

[13] DEPARTMENT of IT Home Page, WWW Document, URL= http://www-it.fmi.uni-sofia.bg/ (date visited: 15.01.1998).