AN APPROACH TO DESIGN AND REALIZATION OF ELECTRONIC TEXTBOOKS[1]

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Summary: *The paper reviews a practical experience of working together students and teachers to create e-learning materials in various disciplines. The possibilities of the environment for web-applications Macromedia Dreamweaver MX 2004 for creating and realization of e-textbooks and e-learning materials are presented. This type of training proposes to students a whole new different way of learning process, stimulating innovation, improvement and professional development.*

Keywords: *E-learning materials, e-textbooks, informatization of education.*

PRISTUP DIZAJNU I IZRADI ELEKTRONSKIH UDZBENIKA

Rezime: *U ovom radu je prikazano prakticno iskustvo zajednickog rada studenata i nastavnika u cilju stvaranja materijala za elektronsko ucenje u razlicitim disciplinama. Predstavljene su mogucnosti okruzenja za web aplikacije „Macromedia Dreamweaver MX 2004” da bi se pokrenuo i realizovao plan za elektronske udzbenike i elektronsko ucenje. Ovakav nacin obuke studentima nudi potpuno novi drugaciji nacin samog procesa ucenja, stimulisanje inovacija, usavrsavanje i profesionalni razvoj.*

Ključne reči: *elektronsko ucenje, materijaliu, elektronski udzbenici, informatizacija obrazovanja*

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1. INTRODUCTION

The main directions of development of the Informatization of education (Robert, p.21-23) read as follows:

❑ The methodology and strategy for the formation of structure and selection of the content of education, methods and organizational forms of training, education, consistent with the objectives for the development of the individual, trained in today's information society;

❑ The design of educational technology oriented towards the development of the intellectual potential of the learner to the formation of skills for independent learning, conducting various types of independent activity in the collection, processing, transmission and production of educational information;

❑ Distributed learning opportunities for the application of the means of information and communication technologies (ICT) in the absorption of different subject areas;

❑ Implementation of the opportunities of educational information interaction and the potential of distributed information resources of local and global network as a basis for the functioning of a single information educational environment;

❑   Pedagogy-ergonomic environment for effective and safe application of resources of computer, information and communication technologies used in education;

❑ Setting out an informational management environment of the educational process of the educational establishment, development of automated systems for information-methodical ensuring of the educational process and organizational management.

These aspects intertwine. For example, the third direction - distributed learning of the opportunities for the application of the means of ICT in the absorption of different subject areas can not be developed without: the design of educational technology oriented towards the development of the intellectual potential of the learner and to the formation of skills for independent learning; operation of a single information space education, combined with the educational information interaction and distributed information resources of local and global network; creation of pedagogy ergonomically-conditions for effective and safe application of the resources of computers and ICT in education.

The current work is an example of such an interaction between the different strands. The presented educational site is developed by means of the environment *Macromedia Dreamweaver MX 2004* and with the collaboration of students from third course learners specialty "Informatics and Information technology", at College - Dobrich of Konstantin Preslavsky University of Shumen. The work serves primarily to reinforce the skills and knowledge acquired in the course "Web technology"; secondly - to develop the intellectual potential of students and skills for self-knowledge and solving practical problems; involvement of the students in the improvement of the educational process in the College, and hence the acquisition of the confidence for the future realization of the students taking part in the development and the satisfaction and importance of the fulfillment of the tasks; and last but not least the students - future users of the site - will show desire and ambition take part in such projects, which will contribute again to the implementation of the above-outlined goals. The result is a course in which it will be a small local conversion of the abovementioned areas of the development of informatisation education. The electronic study materials included in the educational site presented in this paper are organized following the example of the training course on Operation systems in the web site (Milev, 2014).

2. POSSIBILITIES OF MACROMEDIA DREAMWEAVER MX IN DEVELOPING EDUCATIONAL WEB-SITES

Macromedia Dreamweaver is a programming environment, by which is easy to create and edit web-based applications. It has a integrated code editor for the most common languages for web programming: HTML, CSS, PHP, ASP, ColdFusion, JavaScript, ActionScript, VBScript and more. It can create and use templates. When processing a page it can be worked in different modes - for designers and developers. The principle of work in design mode is associated with a selection of designs from one of the many templates for pages, then the only thing left for the user is to insert the information desired. Everything is quick, easy and with a beautiful design - almost a professional way without using the services of web developers and designers, and most importantly - completely free of charge and without prior knowledge of the infinite series codes and scripts unlike developers regime in which this is imposed.

The program is very easy and comfortable for almost anyone who does not have knowledge and experience in web programming. (*Dreamweaver 2004, Macromedia 2004, Page, K. 2004, Meadra 2004*) For students studying in the specialty "Informatics and Information technology" this programming environment is very suitable for the implementation of the project on the creation of an educational web site. The aim of the project is to make a web-site with educational materials of different subjects studied in the curriculum of the college specialty "Informatics and Information Technology", developed in College - Dobrich from 2001 year.

Programming environment Macromedia Dreamweaver offers a variety of design templates web sites. Such a ready design template is used to create our educational site. Fig. 1 shows the initial window of Dreamweaver. From the Start menu, the developer of the site can choose from three different options:

❑   „Open a recent item" - this option is used to open an existing project;
❑   „Create New" - this option is used to create a new HTML, PHP or any other document;
❑   "Create from Samples" - this option is used for selection of ready-made template.

Our choice is the last option or the use of ready-made template. After choosing a window appears with various types of patterns shown in fig. 2. We choose the finished dreamweaver template named "*Fixed top, Nested Left*". Once you choose the template it appears the original type pattern (fig. 3), which is modified to make site simpler and more convenient for the reading and the reviewing of students who will use the electronic educational materials published therein.

The site is designed maximally simplified without unnecessary effects and pictures. The goal is learning, hence to read the material without straining the sight extra with bright colors or animations, so the information can be better utilized. Therefore in the template is changed only the background color of individual fields of the window (from white to bright and eye irritant colors).
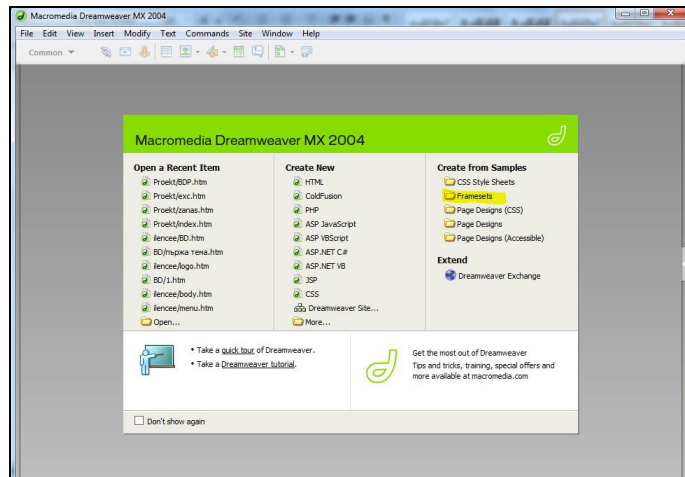
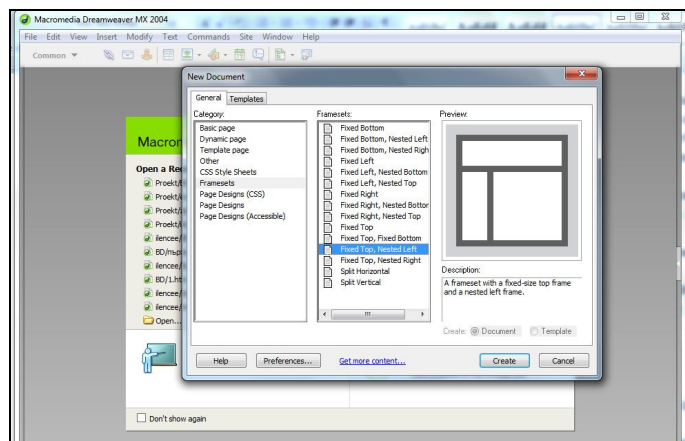**Figure 1:** *Initial screen of program design mode*

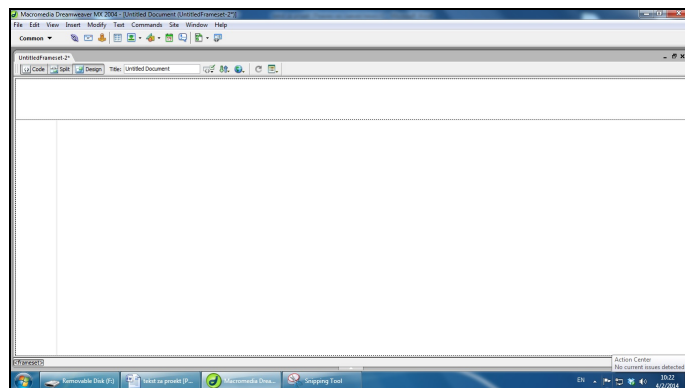**Figure 2:** *Select a template*

Figure 3: *Initial appearance of the template before modification*

Fig. 4 shows the homepage of the designed web-site after the modification of the color of the background and the letters.
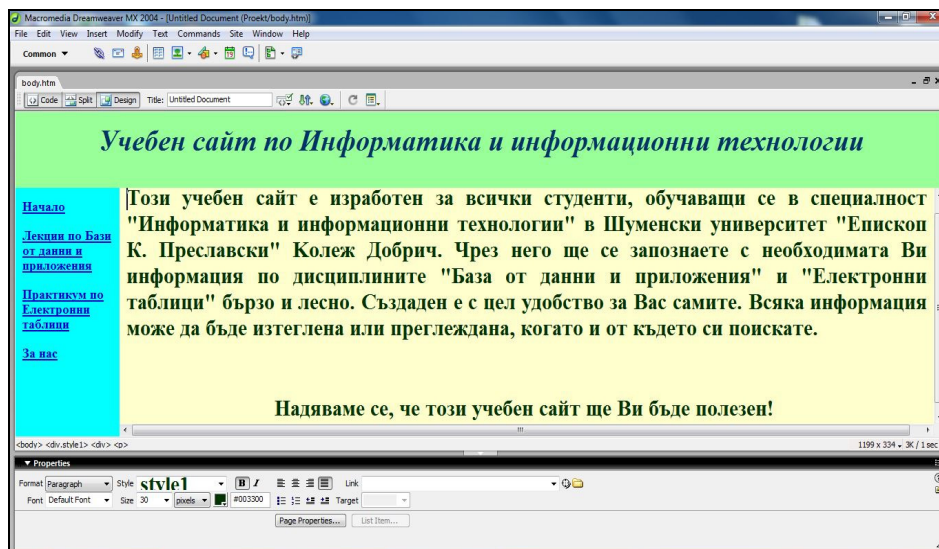

Figure 4: Initial appearance of the template after modification

The developed web site contains materials on various subjects, which are separated in different HTML pages. Page for a course is created with the command New from menu File. The screen displays a dialog box from which is selected Category, or in the case of Basic page, where we choose creating a new HTML document. Creating a new page for the course is shown in fig. 5.
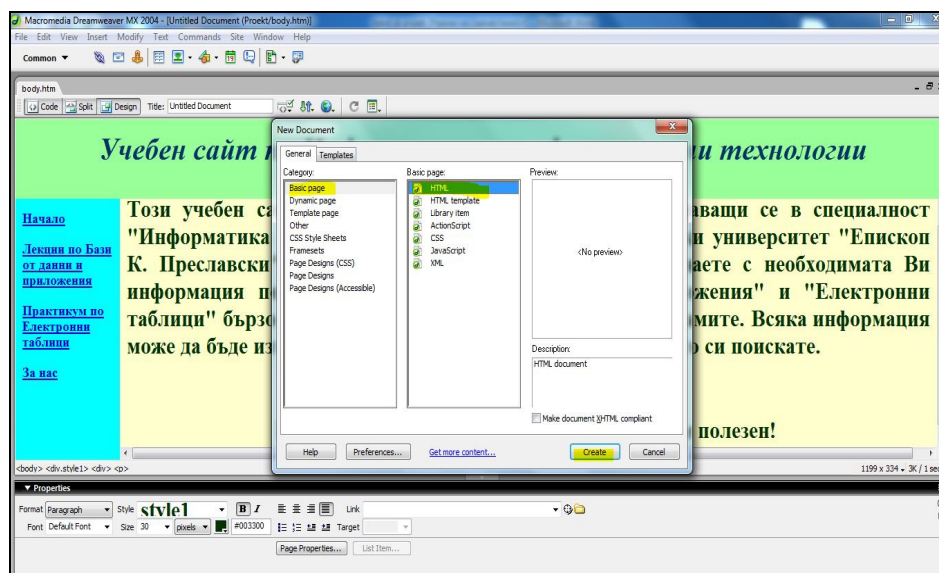

Figure 5: Creating a Basic page

Once created the page course can be edited by the teacher of the Course. In the page Databases and Application (fig. 6) the background is changed and is added content in the textbook of the course. After selecting a specific topic, the page opens the corresponding lecture. Fig. 7 shows the top of the first lecture in Databases and applications.
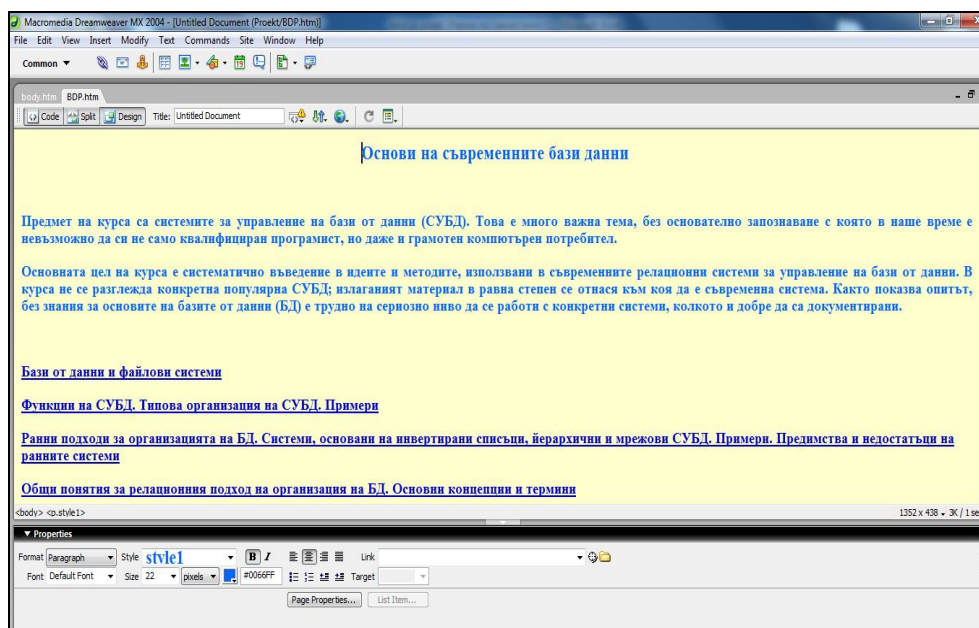

Figure 6: *Creating a Basic page*

3. REALIZATION OF EDUCATIONAL WEB SITE BY MEANS OF MACROMEDIA DREAMWEAVER MX

All the study materials in the site are realized in format PDF, for the following reasons:

❑ PDF is much more secure, unlike other documents with file extension such as word, html or text, each of which can be modified within just a few seconds.

❑ The format of the original document is supported by all operating systems and platforms. A typical example of this is that the PDF document created on Apple Mac computer can be sent via email to anyone who has a PC running the operating system Windows. The same document may freely be opened without changes to the recipient's computer, while this does not applies for example Word document.

❑ Last but not least the PDF documents are extremely small in size, making them more comfortable sending via e-mail, and the volume of the space for educational sites usually have some limit.

Fig. 7 demonstrates the homepage of the course in the discipline "Databases and applications". Since the featured on the site learning material in Databases and applications is mainly theoretical and will be read, the background is selected pale green color and the text is dark blue.
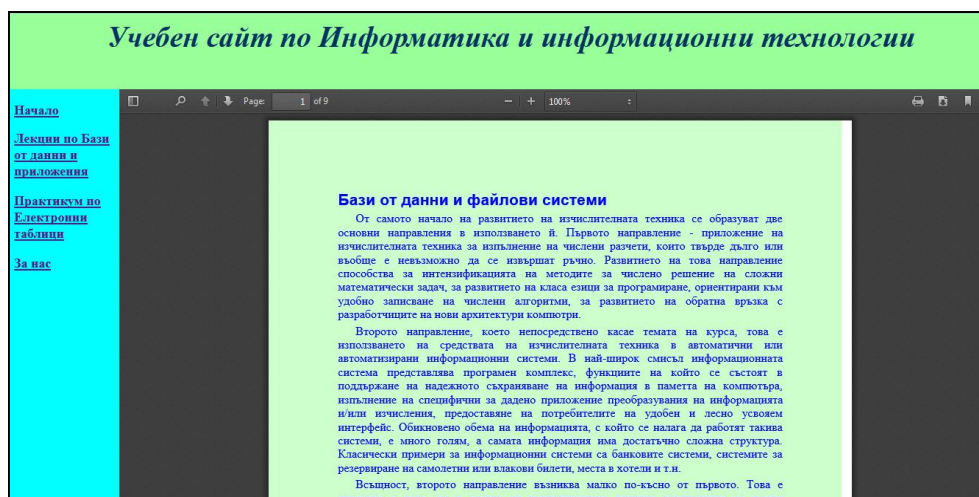
Figure 7: *Materials in PDF format*

Fig. 8 demonstrates homepage for the course "Spreadsheets". When choosing from the main menu of the site (left of the window - fig. 8) the contents of the HTML page that is created in this discipline, namely topics and tasks, appears on the screen. Each topic has a link, to the page content on the topic, this means that its choice will open a new page, or as in the example will show the whole topic.

Fig. 9 and fig. 10 show how the different themes look (Exercise and tasks for independent work) of discipline Spreadsheets. Each topic, once selected, can be viewed, downloaded or printed. For the convenience of the student viewing a topic, the size may be increased or reduced.

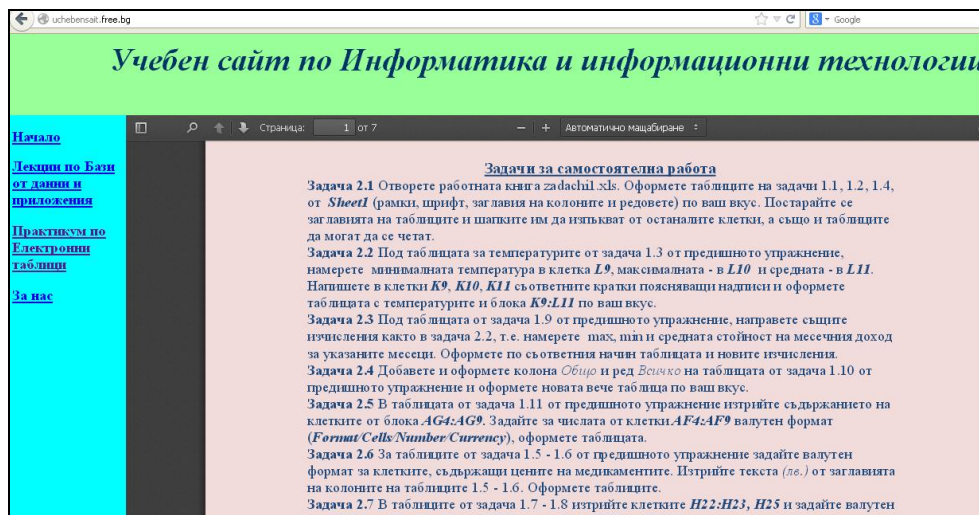*Figure 8:* *Window with the contents of the e-course on Spreadsheets*

Figure 9: *Window of tasks for individual work to the second topic of the electronic course Spreadsheets*
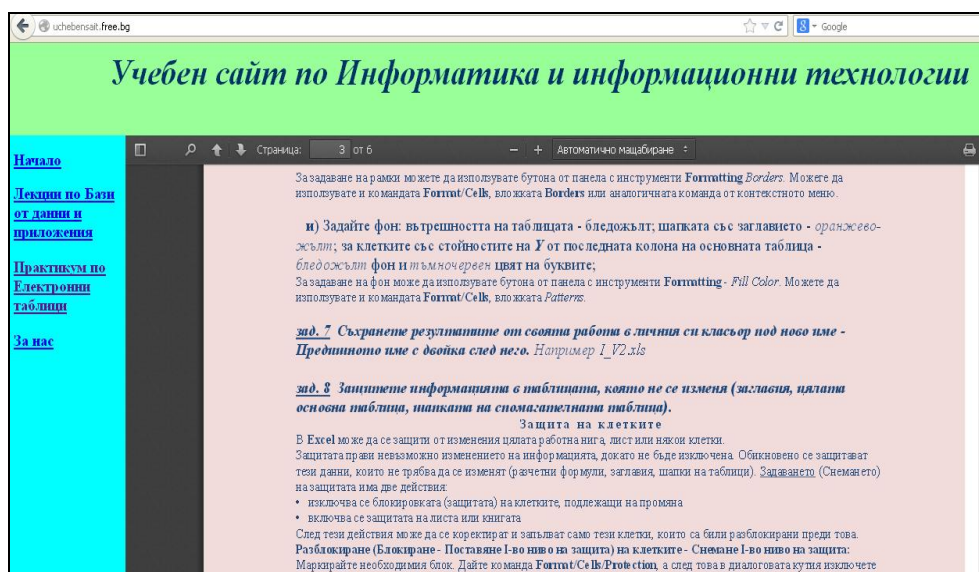

Figure 10: *Window of tasks of the practical exercise in second topic of the electronic course Spreadsheets*

4. CONCLUSION

More and more teachers (especially in the universities) of different subjects develop e-textbooks or participate in teams developing e-learning sites. The Electronic Manual on a relevant discipline, developed with funds that provides mid Macromedia Dreamweaver contributes to a full understanding of the material and reinforce it. Done in such a way the learning (especially in the specialty Informatics and Information technology) offers the opportunity for students to keep pace with information technology and they themselves to have a innovative thinking.

At the site of http://uchebensait.free.bg/ the publication of trial development of electronic textbooks and other teaching materials will continue. After successful testing these electronic textbooks will be included in the "professional" pages of the professors who develop them. Work on the eduacional site will continue not only with the inclusion of new subjects from curriculum of the speciality Informatics and information technology, but with the addition of pages for the verification tests and evaluation of the knowledge of the subjects.

The good practice working on this project is that students except of their participation in solving real practical problems, learn to work as a team. Furthermore, working with a teacher always benefit both the teacher and the students. And last but not least: in working on such a project, students acquire a sense of satisfaction, not only the acquired knowledge and skills in their specialty, but satisfaction that were useful and were involved in something meaningful.

5. REFERENCES

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