AN APPLICATION FOR THE EDUCATION OF HEATING PLANT TECHNOLOGIES ON INTERNET

Murat BARAZ[1]

ABSTRACT

It is inevitable to make use of internet in the educational environment today when especially it is used at every phase of our lives.

In this study, it is aimed to prepare an application for the education of heating plant technologies through internet network. To reach the target, web pages of subjects, and subject related sample projects are shown. Besides the theoretical knowledge, interactive applications such as, dialogs between lecturer and student, and examination applications are released. The missing points on internet based on education of technical subjects are tried to be eliminated by various illustrations, figures and catalogs.

FrontPage was used to prepare the web pages in this study. In some parts of study java applet and java scripts were utilized. So visulization of the prepared web pages improve and made more atractive to edication.

Keywords: Heating, Projecting, Distance education, Internet based education

1. INTRODUCTION

In today's world where the "Internet" concept is more popular than ever, it was inevitable to see this concept enter the field of education. In this sense, many studies have been carried out on the transfer of social program courses to electronic environment, yet there are fewer studies regarding the transfer of technical program courses to the Internet. This study aims to arrange an application for the purpose of providing online heating installation technologies education.

1.1 The Internet and Education

The Internet can be used for web-based education materials, information transfer, research and development purposes [1]. As websites include links to audio and visual tools, interactive tools (chat, video conferencing etc.), communication media (e-mail, list and newsgroups) and also other websites, education materials can unlimitedly make use of all such services. [4] Students and teachers can benefit from an interactive education facility thanks to the hardware technologies developing within the scope of education.

1.2 Aim of the Study

This study offers heating installation technologies-related theoretical and practical information gathered from various sources to users. Along with such information, sample problem solutions support the study. Several teaching methods are implemented in these transfers. When we take a closer look at these methods, materials are introduced by user-based written expression and content-supporting illustrations on the one hand, while technical details are given on the other hand with assembly and maintenance drawings. Users are provided a preliminary to both theoretical and practical education with these presentations. A sample visual is provided in Fig. 1.1
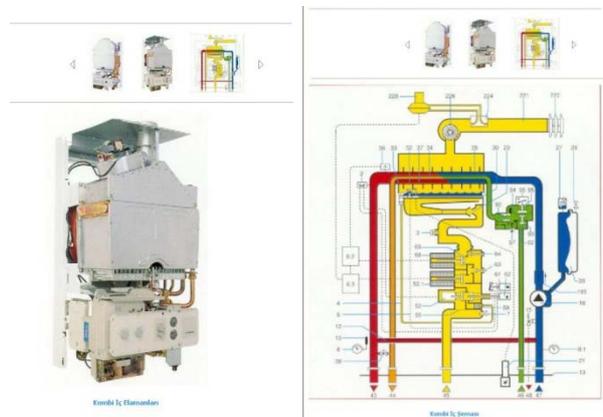

Fig. 1.1 Two Samples From The Created Visual Websites[2]

---

[1] Afyon Kocatepe University, muratbaraz@aku.edu.tr

2. WEBSITE PRELIMINARY

Strategic approach and proper planning plays a key role in the development of active education pages. When we review the developmental stages in consideration of these two points, a four-stage process is revealed: Definition and planning, formation of information architecture and page design.[3]

3. WEBSITES DESIGN

The websites created within the scope of the project are HTML-based. These sites are prepared to provide online theoretical information to users having virtually no idea about heating installation technologies and planning. Another aim of the study is to provide practical information to users through visuals.

The user profile is formed of both students continuing their formal education and the target user group consisting of personnel employed in the sector and requiring training.

It is found that the users decide on whether to stay on the site or not within twenty seconds from opening the site. Therefore, homepage is cardinally important. For this purpose, the template in Fig. 3.1 was created and applied in all pages.

Main Header		
Visual İtems	Menu İndex Links	Main Section
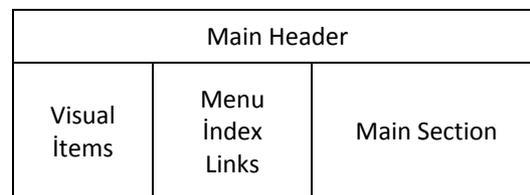
Fig. 3.1 Site Page Template

3.1 Site Sections
The general outline of the site is listed below as brief headings.

3.1.1 Homepage
The section where the user is welcomed. It's not a complex section giving general information without sidetracking the user. The site content covering seven sections is provided in this section. Since the "courses" section form the basis of our site, a separate link is given to provide brief information about the subject.

A link associated with the teacher's e-mail is created in order to enable the reception of user questions, suggestions etc.

A section is arranged under the "Top 5 Links" heading, and major programs, e-libraries, calculation charts etc. are provided in the homepage.

In the homepage under the "Technology News" heading, technology and current news are provided to users.
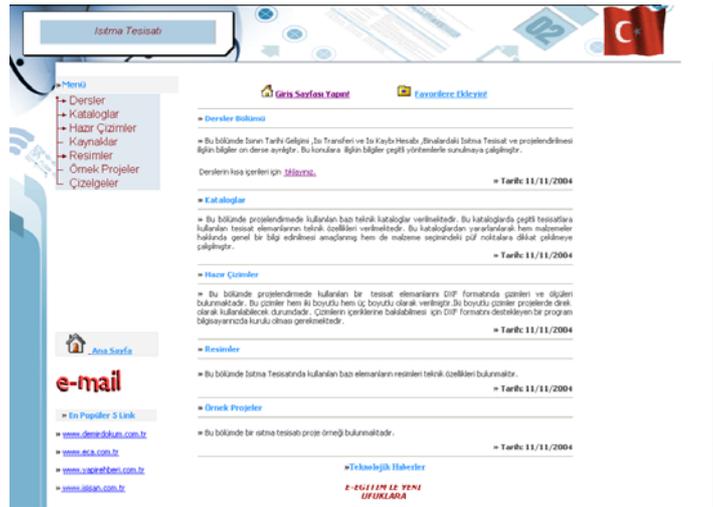
Fig. 3.2 Homepage [2]

3.2.1 Course Contents

The courses are arranged in ten sections. The course titles are given in Fig. 3.1.

Course 1	Introduction	Course 6	Heater Selection
Course 2	Heating Systems	Course 7	Boilers
Course 3	Heat Loss Calculation	Course 8	Expansion Tanks and Escape Pipes
Course 4	Sample Calculation	Course 9	Fuel Quantity
Course 5	Pipe Diameter Calc.	Course 10	Chimneys

Table 3.1 Course Contents

The sections are separately prepared in themselves. Moreover, each section includes menus designed to enable entering the other sections. In this section, a plain language is used in conveying the courses to users. Along with theoretical information, sample problems ensure a better understanding of the subjects. The figures in the site are mainly application-oriented. So, the aim here is to establish an integrity between the figures and the texts. A sample course page and a practical application-oriented figure is provided in Fig. 3.1.

Fig. 3.3 Sample Course Page Images [2]

3.2.2 Catalogues

CDs, catalogues, calculation tables obtained from firms during the preparation of pages are included in this section. This section enables the users to get acquainted with the materials and make comparisons even without any knowledge about the subject. In addition to these material definitions, the tables required by users regarding sample applications are put in this section in the same way. At this point, the lacking parts of Internet-based education regarding practical application subjects are tried to be corrected.

3.2.3 Model drawings

Companies offers model drawing libraries to users in CD format on the electronic environment. Such libraries are reviewed in this section and model drawings commonly used in many projects are provided to users. Users can also download these non-copyrighted drawings to their computers. These files are presented in DXF format which is supported by most drawing applications.

3.2.4 Pictures

Picture function, the biggest advantage of Internet-based education, is attempted to be used optimally in this section. Unlike catalogues, only the pictures of materials are given and their technical specifications are not mentioned. In this section, particularly assembly drawings are also included. The point here is to provide the internal components of devices and to give application-oriented support.

3.2.5 Pilot project

From a general outlook on related studies, it is clear that there is no entirely complete project application involved. A study is carried out to fill this gap and let users learn the topics individually. Besides, a pilot project is devised and a project-related architectural plan and an installation project are created. The calculations of the project are put into Excel spreadsheet format. These applications are placed in the site and users are able to make changes in them. The user can also import any changes made.

3.3.6 Charts

In this section, charts required for all applications are turned into Excel tables and given under the Charts heading. These tables can be used independently of other pages. The use of multiple sources and compilation of these various charts present another advantage of Internet-based education.

4. CONCLUSION

Tables drawn up by various firms are used in technical applications. Since the created websites are also technical applications, several firm and organization website links are provided on the homepage. Hence, users are provided a wide variety of sources regarding heating installation.

In our day where online education material transmission is becoming increasingly popular, it is clear that adding actual samples to education materials is an important element in drawing user attention and enhancing motivation as well as in enabling the user to watch freely. A more active learning can be achieved without distracting the user if this process is accomplished fast enough. Moreover, the presentation of such a sample will enrich education materials and provide a great advantage to users having visual learning ability.

Following its publication, the site earned wide coverage in related sectoral publications as a source worth checking out. And this shows that the study is accepted by the target group.

REFERENCES

[1] Isman, A., (1998). Remote Education. Degisim Publishing, Istanbul.

[2] Baraz, M., "An application regarding online heating installation technologies education", Master's Thesis, Afyon Kocatepe University, Institute of Science and Technology, 2005.

[3] Alkan, M., Tekedere, H. Genc, O. (2001). "Website Design and Development of Websites with Multimedia Elements in Internet-Based Education", IT-Based Education and Training and Education Conference Papers, pp. 240-246, Ankara.

[4] Bay, Ö.F., Tuzun, H. (2002) Web-Based Publication of Course Contents in Higher Education Institutions. Journal of Polytechnic Vol.: 5 Issue: 1 pp. 13-22, Ankara

[5] Kocaman, E. Ş. (2002). "Creating an Interface for Online Remote Applications", Master's Thesis, *Ege University, Institute of Science and Technology,* Izmir.

[6] Alkan, C. (2005). Educational Technologies. Ani Publishing. Ankara.

[7] Bal, M. (2001). "Remote Education Methods and Applications", Master's Thesis, *Yildiz Technical University, Institute of Science and Technology,* Istanbul.

[8]Turkoglu, T. (2002). "Web-Based Education: A Sample Application", Master's Thesis, *Gazi University, Institute of Science and Technology,* Ankara.