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## THE CRITICAL EVALUATION OF A FACULTY OF EDUCATION WEB SITE BY COMPUTER TEACHER CANDIDATES

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### Abstract

The aim of this research is to investigate the Web site evaluation skills of computer teacher candidates as they assess the Trakya University Faculty of Education web site in terms of visual design, structure and navigation. The research utilizes a Web Site Evaluation form and a semi-structured interview in order to collect the required data. The analysis of the quantitative data has been carried out via descriptive statistical techniques; with the frequency and percentage distribution figures for each item given in charts; whereas the analysis of the qualitative data has been carried out through descriptive analysis techniques. It was concluded from the study that the computer teacher candidates found the faculty web site to be easy to use and fluid in terms of navigation and they reported that the site works as intended and without problems. However, it was also reported by the teacher candidates, that the faculty web site had neither a customized site search engine nor a promotional video and that, the promotional images needed a more professional touch in order to have a stronger effect on visitors. Another conclusion was that the computer education teacher candidates tended to pay attention on issues like color schemes in the visual design of a web site and that they preferred not having too much visual detail or animations within similar websites.

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*Keywords:* CEIT, Web site evaluation, Web design, Education Faculty

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## 1. Introduction

The rapidly developing Web technologies in the recent years have resulted in improved dynamicity, richer visual content and faster loading times of Web pages. Even though most of these new technologies may seem to be exclusive to private industries; they are also employed by Web sites of governmental organizations, including educational institutions such as universities or libraries.

The Web sites, which serve the purpose of education, have been positively affected in terms of technical structure and ease in content updates by developing Web technologies. As a consequence, the Web sites of many academic institutions have been re-structured. However, Web technologies alone are not enough to create Web sites that serve the needs of the target audience; and there is always a need to implement them by taking usability issues into account (Calongne 2001), since usability means quality in Web sites and it puts the users and their real needs in the center (Zaharias 2004). There have been numerous studies seeking to evaluate the usability of Web pages that belong to academic institutions and re-structure them according to the results. Cobus et al., as well as McGillis and Toms, have worked with users of library web sites in order to evaluate the usability of the said sites (McGillis and Toms 2001; Cobus, Laura et al. 2005), whereas Uçak and Çakmak, as well as Zengin and colleagues, (Uçak and Çakmak 2009; Zengin 2011) have collected user opinions in order to evaluate the web sites of respective academic departments. Kutluca, Tamer and Aydin have conducted a large scale research to evaluate through expert reviews the Web sites for 67 Faculties of Education in Turkey and reported the results (Kutluca, Aydin et al. 2009).

A recent example of an academic institution web site that has been re-structured to reflect new technologies in Web site design is the Trakya University Faculty of Education Web site. The faculty houses a department of Computer Education and Instructional Technology (CEIT), where pupils enrolled also take up Web page design and Web programming courses as part of the undergraduate curriculum. The undergraduate program thus helps the students become individuals that are knowledgeable in these fields

This study provides information on the infrastructure of the new Trakya University Faculty of Education Web site, which was re-structured and published in 2011; then showcases an evaluation of the new Web site by the computer teacher candidates that are enrolled as students in the Computer Education and Instructional Technology undergraduate program offered by the faculty; and finally discusses the results of the evaluations.

### *1.1. The Technological Infrastructure of the Web Site*

The previous version of the web site, which had been based solely on HTML, proved to be inefficient in terms of page updates, user interaction and dynamic processes. However, the re-structured Web site, which was built and published in the year 2011, uses JQuery and Ajax structures, which form the basis of today's Web 2.0 and Semantic Web technologies. Therefore, dynamic web pages that allow for updates through user interaction have been created for the site. The programming language employed for the construction of the site was C# under ASP.NET technology. Additionally, data such as personnel hierarchy and website news feed entries have been recorded into a database running on MS SQL Server 2008 database management system. At the design stage, the CSS language has been used in order to achieve identical appearance over different Web browsers.

## 2. The purpose of the research

The purpose of this study is to assess the evaluation of the new Trakya University Faculty of Education Web Site, which has been published as of 2011, by the students of the Department of Computer Education and Instructional Technology at Trakya University Faculty of Education.

The answers for the following questions have been sought in accordance with this purpose: According to the students of the Department of CEIT, who are also Computer Teacher candidates, how is the Faculty of Education web page evaluated

- in terms of technical and navigation structures; and
- in terms of visual design?

## 3. Method

### 3.1. Research model

The research employs two methods, namely the quantitative “general screening model” and the phenomenological model, which is a qualitative research method. As a result of a review on current literature, a 37-item questionnaire named the “Web Site Evaluation Form”, which was developed by Kutluca, Aydin and Baki (Kutluca, Aydin et al. 2009), has been chosen as the data collection tool for screening purposes. The aforementioned research employs the form as a tool of expert review and the form has been used within this research on computer teacher candidates, who are both site users as students and Web site design experts in-training. Additionally, in order to clarify the results and to precisely find out about students’ opinions, interviews have been made with 2 students from each class and evaluated in terms of qualitative methods.

### 3.2. Population and sample

It is intended to assess the evaluations of the Trakya University Faculty of Education Web Site by computer teacher candidates that are undergraduate students at the Department of Computer Education and Instructional Technology (CEIT). The population of the study has been set as 143 students that are studying in Trakya University Faculty of Education Department of CEIT. Purposive sampling has been used at the qualitative data collection stage of the study, where two students have been chosen from each classroom for interviews. The purposive sampling variables for the selection of interview participants have been set as student class and gender.

### 3.3. Data collection instruments

Data for the evaluation of Trakya University Faculty of Education Web Site has been collected via the form that has been selected, during February 2012 and March 2012. The scoring for items in the Web Site Evaluation Form have been set as Yes (2), Partially (1) and No (0) The frequencies and percentage values acquired as a result of analyses on quantitative data have been shown in charts. A semi-structured interview form has also been created by the researchers in order to use in the interviews made for the qualitative data collection stage. The form, which has been based on relevant literature, has been subjected to expert review and edited in accordance with the feedback received.

### 3.4. Data analysis

The data that has been collected via the Web Site Evaluation Form has been entered into a spreadsheet created in MS Excel software. Frequency and percentage values have been obtained from this spreadsheet. As for qualitative data, interviews made with the students have been recorded as audio data; to be transcribed into computer text later and handed to an expert for review of integrity. Once the integrity of the interviews has been verified by the expert, they have been indexed. The necessary opinions regarding the interview questions have been selected and entered into an MS Excel spreadsheet. Then, the opinions that have been entered into the spreadsheet have been collected under certain theme categories. Lastly, the opinions which have been categorized under themes have been interpreted by experts and reported as findings

## 4. Findings

### 4.1. Findings obtained from form data

Table 1. Findings on items pertaining to technical and navigational structures sub-category

Technical and Navigational Structures	Yes		Partially		No	
	f	%	f	%	f	%
Is it easy to control the use of the site?	88	62	39	27	16	11
Are all the pages of the Web site working without problems?	81	57	45	31	17	12
Is the information architecture of the Web site too complex?	30	21	48	34	65	45
Is it easy to navigate between pages?	90	63	40	28	13	9
Is there a search engine within the site?	40	28	15	10	88	62

According to the values on Table 1, it can be deduced that the Web Site is easy to use; that there are no problems at any of the web pages and that; navigation in the website is easy. However, there seems to be a problem regarding the site search engine. There also seems to be a partial problem regarding the information architecture.

Table 2. Findings on items pertaining to the visual design sub-category.

Visual Design	Yes		Partially		No	
	f	%	f	%	F	%
Are font faces and sizes consistent in all the pages that comprise the site?	83	58	34	24	25	17
Does the site include visuals and photographs that promote the faculty?	103	72	36	25	4	2,8
Do the web pages for different departments/divisions share a common visual theme?	91	64	41	29	11	8
There are web pages within the site that do not work / can't be reached.	28	20	33	23	82	57
Are there animations on the site pages?	63	44	36	25	44	31
There is much detailed information on the pages	31	22	49	34	63	44
Too many different colors have been used in the site's pages.	20	14	50	35	73	51
Do you think that color harmony has been preserved throughout the site?	102	71	31	22	10	7
Are there pages that are still under construction?	23	16	39	27	80	56

According to the figures on Table 2, the only problems regarding visual design seems to be about animations and about lack of detailed information on the pages.

## 4.2. Findings obtained from interview data

### 4.2.1. Technical and navigational structures

The teacher candidates that have been selected for participation in the interview phase of the research have been initially asked about their opinions on the technical and navigational structures of the Faculty of Education Web page. It was found that the teacher candidates generally thought that the means of access to the Web site is quick and sufficient and that the content of the Web page is easily reachable through the menus and other organizational elements that are parts of the site navigational structure. On the other hand, some participants of the interviews have reported that certain menus have failed to operate and that transition between pages failed at times. The computer teacher candidates also reported that, in spite of the occasional technical difficulties, the transition through menus and pages is clear and fluid; whereas the menus have been designed as neat, simple and understandable.

*“Yes, it works fast but, I mean, we do have a CEIT group in the Faculty of Education and because of that... well, I guess the site could have been designed to be more lively. I thought the navigational structure could be improved.” [Y.B.]*

*“Transitions are swift in general. There are no problems in that aspect. However, there seems to be some problems when moving between menus. Menus seem to close by themselves in case they are not aligned, and then you have to re-open them..” [Y.B.]*

*“Yes, I mean, as far as navigation is concerned, I can freely move around the site. I can check out all the educational departments of the faculty, as it can be seen from here”[G.K.]*

### 4.2.2. Visual Design

It can be said that the opinions of the interviewed teacher candidates regarding the visual design of the Web site is generally in the positive direction. The overall themes discussed in the stated opinions are the color palette, picture quality, and the use of video and animations. The teacher candidates have reported that the color palette is designed as harmonious; however, the selection of the colors should have been more appropriate for a university, which is a governmental institution after all. In addition, one teacher candidate reported that the orange color, which was one of the colors contained in the color palette for the Web site, was discomforting for the eyes, hence creating trouble for the site visitors.

*“Orange. I’ve read somewhere about the orange-blue combination in Web sites, about how it is exhausting for the eyes. It keeps attracting unnecessary attention.”[E.K.]*

*“The color scheme is harmonious, it is beautiful, there is nothing too extreme or eye-biting about it. Which is normal since, I mean, it is the Web site for a University, which is an official institution. So I can say yes, it is good”[Y.B.]*

Another aspect of visual design that has been discussed is image quality. Teacher candidates reported that they found the images to be very ‘amateur’ in terms of technical quality and appropriateness for the Web site. They also reported that they expected more professional images that promote the Faculty more effectively.

*“A lecture hall has been shown in one image but, it is completely empty. I think it would be better to have the image of a hall with students inside.” [B.B.E.]*

*“Sure, there could be more appropriate, proper images at the site. These photos also look, how shall I say, a little artificial” [A.Ö.]*

Various opinions on visual design have also been discussing about video and animations. Teacher candidates have reported that the lack of videos that are promoting the faculty is a disadvantage and that these needed to be included in the Web site. As for animations, the teacher candidates reported the number of animations used in transitions between site images is sufficient and that too many animations in the Web page would have been inappropriate anyway.

*“There are image transition animations. That is a good thing. There are no problems with it either, so I can say it’s pretty nice.” [E.Ö.]*

*“Too much of that would be disturbing. The current level of animations is enough.” [Y.B.]*

*“Yes, a promotional video could be effective.” [E.K.]*

The interview featured several questions regarding the visual design of the site text content. The answers pointed out that the font face and size used in the web site are appropriate for the target audience. It has been reported that the text was easily readable and the content was understandable.

*“The notice board text is beautiful. The overall font faces are normal, too. They’re not too large, nor too small. The size is completely readable, which is nice.” [E.Ö.]*

*“No, I think the font sizes are quite fine for me. For example, here, this notice board text, which keeps flowing, and the fact that it changes color when I click here, it is good, useful.” [G.K.]*

## **5. Conclusions and recommendations**

According to the research, computer teacher candidates believe that, as far as technical and navigational structures are concerned, Web sites with menu elements that enable fluid and dynamic transition between pages are more effective. In addition, as far as visual design is concerned, the computer teacher candidates seem to care about harmony in the color palette, believing that a Web site for an official government institution needs to have simpler colors. It was stated that the images used in the Web site are not effective for the promotion of the faculty, that more professional and higher quality images need to be used for this purpose and that it can be much more useful to include promotional videos in the Web site. It is thought that too much use of animations could result in distraction and disturbance of the eye sight. As far as text properties are concerned, the teacher candidates believe that readability of the Web site is good.

The following recommendations could be made as a result of the analyses:

- It was understood that the lack of an intra-site search engine is a disadvantage according to the students. Adding a search engine to the Web site should be considered.
- Students have reported that the images used in the Web site are of amateur quality. The images therefore need to be replaced with more professionally acquired ones.

- It has been understood that the students could not be well informed about the faculty and its departments due to lack of promotional videos. Such promotional videos need to be prepared.
- It was found out that the Web site does not feature language selections for international visitors, such as exchange students from the Erasmus program. For this reason, translated versions of the Web site need to be developed.
- It was found out that photographs of faculty administrative staff are not present on the Web site. The photographs of the administrative staff need to be uploaded.

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