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**INTEGRATION OF WEB PAGES INTO THE COURSE CONTENT IN E-LEARNING**

**ABSTRACT**

The internet presents a huge variety of web pages to be used for learning and increasing students' knowledge. There are countless web sites available on the internet most of which can be useful for educational purposes if they are pre-determined with care to be fitted the chosen course content. In this study, we tried to integrate pre-determined web pages into the content of English I lesson of computer programming department of distance education in Kirikkale University. Four web sites pre-determined by the lecturer were integrated into the lesson content to complement and enhance the learning material. The students were asked to report their opinions about these web pages. Some of the striking extracts from their opinions are presented in this paper. It is concluded that enhancing lesson content with the integration of web pages can be useful to increase the understanding of the students about the subject matter.

**Keywords:** Web Sites, E-Learning, Distance Education,  
Content Development, Educational Technology

**E-ÖĞRENME'DE WEB SİTELERİNİN DERS İÇERİKLERİNE ENTEGRE EDİLMESİ**

**ÖZET**

İnternet, öğrenmede ve öğrencilerin bilgilerini arttırmada kullanılabilecek çok fazla çeşitliliğe sahip web sayfalarını içerir. Ders içeriğine uygun internetteki web siteleri önceden dikkatlice belirlendiği takdirde; pekçoğu eğitim amaçları için uygun sayısız web sayfaları ile karşılaşmak mümkündür. Bu çalışmada, önceden belirlenmiş web sitelerinin, Kirikkale Üniversitesi Uzaktan Eğitim Bilgisayar Programcılığı İngilizce I dersinin içeriğine entegre edilmesini amaçladık. Dersin öğretim üyesi tarafından önceden belirlenen dört web sitesi, öğrenme materyalini tamamlamak ve pekiştirmek için ders içeriğine entegre edilmiştir. Öğrencilerden bu web sitelerine dair görüş bildirmeleri istenmiştir. Bu görüşlerden dikkat çekici olanlar bu çalışmada sunulmuştur. Web sayfaları entegre edilerek ders içeriğini zenginleştirmenin, öğrencilerin sunulan konuyu anlamalarına faydalı olabileceği sonucuna varılmıştır.

**Anahtar Kelimeler:** Web Siteleri, E-Öğrenme, Uzaktan Eğitim,  
İçerik Geliştirme, Eğitim Teknolojisi

## 1. INTRODUCTION (GİRİŞ)

Students' interests and abilities have undergone a tremendous change with the continuously available information on the internet and the unceasingly growing number of computers connected to the internet (Marzak et al., 2001). Recently, internet as a resource for helping teach many subjects are on the increase (Phillips, 2003). The Web can, therefore, be considered as a golden opportunity for enhancing learning. In e-learning platforms, lecturers are the content creators and these contents are limited to their experience and the textbooks. However, internet, full of ready-made online learning resources, may aid to overcome these limitations. In other words, the wealth of material on the internet that can be used for teaching purposes, can be used to break the limits of textbooks the lecturers mostly use when developing content for their students. It can be true to state that web contents have a great potential beyond textbooks. When using web pages in their lectures, lectures have a great variety of ways to integrate them into their lectures. Lecturers are still exploring the ways gradually (Hinde, 2003). They should have good searching skills to choose qualified learning materials from vast number of web pages. These skills can help them to find appropriate material related to their content in less time and can, therefore, shorten the lengthy content development process.

The content of a lecture increase the effectiveness of a lecture and make the information more comprehensible to the students. E-learning material development generally considered as a lengthy and expensive process (Arman, 2010). To overcome these difficulties, lecturers, that is, content providers in the e-learning environment, have to put much effort to create effective e-learning content. Developers of educational technology put great effort to develop content for just one topic; however the World Wide Web has countless pages offering content, some of which are really well-prepared (Razzaq and Heffernan, 2011). Providing students with just lectures and textbooks readings does not satisfy all learning styles (Cheney and Dow, 2010). Therefore, enhancing the content by linking it with web pages, rich and accurate in terms of the information they include, is of great importance to improving the students' understanding of the subject matter. Moreover, lecturers also see how other professionals in the same field approach to the same subject and therefore students can make use of richer experience with the contribution of many lecturers other than their own.

Directing students to find information about the content presented in their lectures, is a futile effort since successful navigation through the web pages is not always easy for learners (Kashihara and Hasegawa, 2005). The estimated number of web pages at least 13.8 billion pages in 2011 (Kunder, 2011) and over 185 million web sites in 2009 ("What is the", 2011). Moreover, it is undoubtedly true that these numbers are growing. Because of hardness in finding accurate information from these huge numbers related the content the students want to explore, it should be the responsibility of the lecturers to find related web pages including information about the lecture since they are experts on that content area and know whether the information on a web page has a direct and close relation with the content in the lecture. In other words, identifying the relevant and appropriate material for their contents, lecturers should check that material they recommend is appropriate for their students and educational purposes. Yusuf (2006) reinforces this idea by stating that only the internet literate individual can use the resources from the internet for developing teaching, learning and research.

In this study, our purpose is to support e-learning content with the integration of web pages related to the subject matter in the content. Since content preparation is a demanding job, any ready-made material having a possibility of enhancing the presented content in the e-learning would be welcomed by the lecturer and also by the students. Moreover, this study investigated the students' opinions on the use web pages in addition to e-learning content in their lectures. Students' positive attitudes towards these additional and complementary materials is important in that when content is enjoyed by the students, this may contribute to the absorption of subject matter more easily and effectively.

### **1.1. Evaluation of Websites for Educational purposes (İnternet Sitelerinin Eğitimsel Amaçlarla Değerlendirilmesi)**

With the ever increasing number of web sites on the internet, anyone can publish educational materials on the internet (Media Awareness Network, 2000). In other words, anything can be published by anyone on the internet whether it is high or low quality. Unendless streams of information are accessible to the lecturers. However, there may be many websites not having accurate knowledge, reviewer, editor or review mechanism to determine the quality of the material on the websites in terms of creditability and accuracy. Therefore, when an educator is trying to determine the appropriate material on the internet, his chances of ending up with incorrect and out of date materials in the searching process are high. In such cases, the learners are in danger of encountering incorrect information added to the lecture content by the instructors. Since there are risks of passing inaccurate information to the students, educators should be meticulous in their evaluation of web pages.

It is true that most of the educators are unaware of how to check the appropriateness, accuracy and credibility of information on websites. Therefore, educators wanting to use some kind of information from the web in addition to their own content to enhance and deepen the understanding of the students on the subject, should first start to learn to check the web sites for its appropriateness. There are many evaluation criteria and checklists for the evaluation of websites for educational purposes. Educators should evaluate the web site in terms of its coverage, objectivity, currency, accuracy and design. Table 1 below is for evaluating web content of a web site :



Table 1. Evaluation of web content  
 (Tablo 1. Web içeriğinin değerlendirilmesi)

Coverage	<ul style="list-style-type: none"> <li>• How completely does the site explore the topic. Compare it to other sites.</li> <li>• Does it provide you with a bibliography of printed works or a list of other sites to help you expand your understanding of the topic.</li> <li>• If the material is a digitized version of a printed document, is it complete including images, graphs, tables, etc..</li> <li>• Do the sources come from a variety of journals, books, and other materials, or does the author cite the same sources repeatedly.</li> </ul>
Objectivity	<ul style="list-style-type: none"> <li>• Does the author or publisher of the page have a vested interest in the topic.</li> <li>• Are the author's sources of information clearly documented and, if you are lucky, linked.</li> <li>• Are both pro and con views of controversial topics given.</li> </ul>
Currency	<ul style="list-style-type: none"> <li>• Does the site tell you when it was first created.</li> <li>• If the material is digitized from printed copy, what edition was used. Is it the most up to date available.</li> <li>• Does the page clearly indicate when it was last updated.</li> </ul>
Accuracy	<ul style="list-style-type: none"> <li>• Is the factual information given correct. Error creeps in, even in printed material with editors and proofreaders. More error creeps into the web where there are fewer control mechanisms. Check crucial facts in another resource either on the web or in print. Ask a librarian for recommended sources.</li> </ul>
Design	<ul style="list-style-type: none"> <li>• Easy to navigate within or among pages</li> <li>• Availability of an search function or index on a large site</li> <li>• Aesthetically pleasing graphics and color                             <ul style="list-style-type: none"> <li>• Easy to read text and color</li> </ul> </li> <li>• Thumbnail graphics and rapid download of graphics</li> <li>• It is easy to print or download information from the site.</li> </ul>

("Evaluating Web Content", 2011)

An educator wanting to use information from the web may also find checklists from internet. Since evaluation criteria change, it is advisable to evaluate the web sites in question from different resources to make the evaluation more accurate.

### 1.2. Internet Searching Skills (İnternet Arama Becerileri)

On the internet, to reach information which is exactly what we are searching is considered a daunting task since there are too many web sites. Learning the skills required for finding information from the internet is crucial and failure in those skills is to some extent being illiterate (Monereo and et. al., 2000). In view of huge amount of information on the web, an educator should have the necessary skills for finding the needed information. These skills include the knowledge of various search tools and applications that aid them to find information more accurately and in less time. Table 2 below gives basic guidelines for choosing the most appropriate search tool.

Table 2. Basic guidelines for choosing the most appropriate search tool

(Tablo 2. En uygun arama aracini seçmede temel prensipler)

What are we looking for ?	Where can we find it ?
Information on a general subject	Directory
Information on a local subject	Local search engine
Information on a very specific subject	Search or metasearch engine
Personal web pages	Search engines
Web pages of organizations, institutions, companies, ...	Directories
E-mail addresses	Mail search engine
Books	Library catalogues /ISBN/ Library web sites
Images	Directories

(Monereo and et. al., 2000).

Appropriate search syntax also is of vital importance for reaching what we are searching for exactly and in less time. Some of search syntax is shown in Table 3 below.

Table 3. Search syntax at a glance  
(Tablo 3. Arama sözdizimine bir bakış)

*	Truncation	Stands in for any number of characters, including 0, at the end of a word. <i>Example:</i> Searching for comput* will find articles that contain "computer," "computerized," or "computers."
?	Wildcard	Stands in for one character in or at the end of a word. <i>Example:</i> Searching for educat?? will find articles that contain "educated" and "educator." But it won't find "education," which contains more than two letters following "educat."
"..." .	Quotation Marks	Search words must appear exactly as typed. <i>Example:</i> Searching for "business process" will find business process articles, but not about the process of starting a business
(..)	Parentheses	Whatever is inside the parentheses is searched first, then those results are searched with the words outside the parentheses. <i>Example:</i> Searching for Federal Reserve OR (U.S. AND economic policy) finds articles dealing with either the Federal Reserve or articles containing both the words "U.S." and "economic policy."
AND	AND	Both the search words before and after AND must appear in the article. AND narrows your search. <i>Example:</i> Searching for El Nino AND Atlantic Ocean will only find articles that mention both El Nino and Atlantic Ocean.
OR	OR	Either the words before or after OR can appear in the article. OR broadens your search. <i>Example:</i> Searching for El Nino OR Atlantic Ocean will find articles that mention either El Nino or Atlantic Ocean.

The continuation of table 3		
AND NOT	AND NOT	The search words before AND NOT must appear in the article, but the words after must not. <i>Example:</i> Searching for El Nino AND NOT Atlantic Ocean gives you articles on El Nino, excluding those which also mention Atlantic Ocean.
W/n	Within	Search words must appear within <i>n</i> of words to match. <i>Example:</i> Searching for U.S. W/15 economic policy finds articles where U.S. appears within 15 words of economic policy. This finds articles on American economic policy, but doesn't restrict the search to use the exact phrase "U.S. economic policy."
NOT W/n	Not Within	Search words must be separated by at least <i>n</i> words to match. <i>Example:</i> Searching for U.S. NOT W/50 economic policy finds articles where U.S. doesn't appear within 50 words of economic policy. This finds articles on worldwide economic policy, very few would include information about U.S. economic policy.
PRE/n	Precede By	The first search word must precede the second by <i>n</i> words to match. This is useful for phrase searching. <i>Example:</i> Searching for U.S. PRE/5 economic policy finds articles on many types of American economic policy, such as U.S. foreign aid economic policy, or U.S. wartime economic policy.

("Search Syntax",2011)

### 1.3. Importance and Limitations of Resources on the Internet (İnternetteki Kaynakların Önemi ve Sınırlılıkları)

The internet has great potential in education. In terms of educational materials, actually on the scope of this study, (lecture notes, video, audio, animations, presentations, and etc.) internet offers great variety. Educators using internet resources in their lectures in order to expand their students' knowledge in the subject they teach can choose from a great variety of materials found on the internet. Teachers to some extent, by using the appropriate materials from the internet, can use other educators' experiences and knowledge other than theirs and this means giving better education to their students.

There are, undoubtedly, some limitations regarding the use of materials from the internet. Many resources on the internet may be outdated, inaccurate and unreliable. This may cause difficulties for educators especially for those lacking necessary searching skills for finding appropriate information for their lectures. Despite this limitation related to the sources on the internet, it is still a huge and endless area to delve into for deriving maximum benefit for the students and also the lecturers, the content providers. Moreover, lecturers may develop their searching skills in time and learn to find more accurate and appropriate web sites to their content and will contribute to their students' learning more.

### 2. RESEARCH SIGNIFICANCE (ÇALIŞMANIN ÖNEMİ)

In rapidly changing educational environments and needs, material development remains the key in achieving educational goals. Learning material development process and ending up with high quality material

at the end of this process is expensive and lengthy. In e-learning platforms, developing the lecture content is mainly the duty of the educator. Any attempt to ease the content developers' job and enrich the learning material is, therefore, welcomed. Web pages, full of educational materials, have high value since they can be used to ease the development of a learning material. Adding appropriate web pages to the content in e-learning may increase the changes of students to have a better understanding from the presented content. This study gives importance to benefit from such a chance for the sake of the students and, therefore, to explore the use of web pages as additional learning material is worthwhile.

### 3. METHOD (YÖNTEM)

The study was conducted with 76 students attending Computer Programming Department of Distance Education at Kırıkkale University. All these students are required to pass English I which is included in the curriculum. An e-mail was sent to all of the students asking for their opinions about the web sites integrated into the content. Some of the striking opinions from the responds of students were extracted and presented in this study.

#### 3.1. Determination of Websites (İnternet Sitelerinin Belirlenmesi)

In our study, we chose the subject of "comparative and superlative" in English and we enrich the e-learning content prepared by the lecturer with the addition of pre-determined four web sites for English lesson for the first year students of Computer Programming Department of Kırıkkale University as shown in Table 4. Many web pages related to the chosen subject were investigated and four of them were chosen depending on the expert opinion. While searching the web for additional learning material for the content, a search engine is used with the help of syntax search. This helped to find the appropriate web sites by spending less time to the searching process. All web sites were used as teaching tools to support the learning content in the Learning Management System of Kırıkkale University.

Table 4. Subjects and pre-determined websites  
(Tablo 4. Konular ve seçilen internet siteleri)

Subject	Pre-determined Web Pages
Comparative and Superlative	hemeningilizce.com
	dailymotion.com
	learn-english-today.com
	www.ingilizcem.org

When determining the web pages, a thorough web search was conducted by the lecturer, since there are too many web sites about the subject and 4 of them were found to be appropriate for enhancing the course content. The content in these web sites included lecture notes, video and exercises. Choosing web pages having different types of content were done purposefully by the lecturer. Our aim was to provide a variety in these materials to serve different learning styles of the students. Addressing different learning styles will probably increase the changes of attracting more students to the content. Sample screenshots of these web sites are seen below



Figure 1. Sample screenshot of the web page  
(Şekil 1. Örnek internet sayfası ekran görüntüsü)

<b>Comparative &amp; Superlative Adjectives</b>	
Complete the sentences below with the correct form of the adjective. (The answers are at the end of the page.)	
1. Jeremy is 10 years old. Julie is 8 years old. Jeremy is (old) _____ Julie	
2. The Alps are very high. They are (high) _____ mountains in Europe.	
3. An ocean is (large) _____ a sea.	
4. A Rolls Royce costs a lot of money. A Twingo costs less money. A Rolls Royce is (expensive) _____ a Twingo.	
5. John's results were bad. Fred's results were very poor. Fred's results were (bad) _____ John's.	
6. This exercise is not difficult. It's (easy) _____ I expected.	
7. The weather is not good today - it's raining. I hope the weather will be (good) _____ next week.	
8. People are not friendly in big cities. They are usually (friendly) _____ in small towns.	
9. In the government of a country, the President is (important) _____ person.	

Figure 2. Sample screenshot of the web page  
(Şekil 2. Örnek internet sayfası ekran görüntüsü)

#### 4. CONCLUSION AND FURTHER RESEARCH (SONUÇLAR VE İLERİKİ ÇALIŞMALAR)

In this study, we proposed integration of web pages into the course content to enhance the students' understanding of the subject matter. Since there are a huge number of web sites, it is recommended that lecturers should determine the web sites previously which they think useful for their students. Finding appropriate web sites for the course content requires good searching skills and expert opinion. Therefore, it seems rational to put the responsibility of determining the appropriate web sites for the e-learning content on the shoulders of the lecturers. Lecturers' search skills and field knowledge will directly affect the quality and appropriateness of the learning material found on the internet.

Students participated in this study gave their opinions about the web pages integrated into content. All of the opinions were positive except one. Some of the striking opinions were as follows:

- Student1: These Web Sites are good for me because it directs me out of the learning management system which I sometimes bored of.

- Student2: I am having difficulty in understanding the content in the lecture. The video in dailymotion.com helps me to understand the subject.
- Student3: The exercises in one of the web site helped me to reinforce my understanding. It will be useful to have more exercises since they check whether we understand the subject.
- Student4: Apart from the content in our learning management system, seeing some web pages related to the content makes me happy since my English is not good and those web sites help me in understanding the subject.
- Student 5: I sometimes have difficulty while connecting to the given web sites. This bores me a lot.

As seen in the extracts taken from the responds, students mostly enjoyed the web sites integrated in the content. They stated that they benefited from the web pages in deepening their understanding. The statement of the fifth student might stem from not the chosen web sites but the technical problems the student experienced while connecting to them. Positive attitudes towards the use web sites in addition to the lecture content is important since content is absorbed by the students more when they like what they are studying. In other words not only the quality of a learning material is important in students' understanding the content, but attitudes of students towards content as well. Therefore, further researches on students' preferences for content need to be explored.

In a rapidly changing world of e-learning technologies, content development seems to remain the most essential and fundamental part of e-learning. Therefore, it is important for educators to develop more effective and useful content to be used in e-learning. Since content development is a demanding task, educators should use the ready-made materials on the internet to ease their task and make use of the great opportunities offered to them by the use of web pages. Integration of web pages into lecture content may not only ease the task of content developers, but also enrich the course content for the use of students. More researches are needed to investigate the possible uses of web pages in content development for e-learning. This may ease the lengthy and hard content development process. Since content development is an expensive process, using appropriate course materials on the internet, most of which are free to use for educational purposes, may also reduce the expenses of developing learning materials.

It is thought that any attempt to ease the content development process and any possibility to serve well for offering more benefits to the students' learning processes in terms of the quality of content will most probably be welcomed in the e-learning community. Moreover, apart from using web pages for content development in e-learning by the lecturers, students can be directed by the lecturers to find online learning resources related to the content in e-learning. This may be useful in deepening the understanding of the lecture content and may be suitable for the constructivist approach in which students are seen as the knowledge constructors themselves.

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