

The Impact of Using Webquest on Developing Websites Design Skills Among Faculty of Education Students

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Abstract: *The study aimed to investigate the impact of using WebQuest on developing websites design skills among faculty of education students. For answering the questions of the study, the researchers adopted the experimental approach. The sample of the study consisted of (20) students. The group was randomly chosen from a purposive sample from faculty of education students in the Islamic university where the researchers work. The tool was an observation card to observe the students' performance before and after using Webquest, the observation card consists of 43 items distributed to seven domains for the purpose of measuring the practical skills needed for designing educational web pages. After the implementation of the post-performance, the researchers used the Statistical Package for Social Sciences SPSS to analyze the data collected, and provide recommendations and suggestions. The results of the observation card indicated that there were statistically Significant differences between the first and the last observation in all scopes and the total score of the observation scope, towards the last observation, which meant that the WebQuest was effective. Based on those findings, the study recommended the necessity of implementing the WebQuest method in teaching practical educational technology to bring about better outcomes in students' performance in web design skills.*

Keywords: *(eLearning, Webquest, Webpage design, education students)*

I. Introduction

In digital era, there is no choice to use technology or not, curriculums have to be adaptive for students' need, this required developing teachers' skills to face this progress, these changes and developments are challenging the educational curriculum and program makers. Preparing students to be able to cope with technology is a necessity that should be taken into consideration by curriculum designers. The purpose is to prepare generations to be independent in gaining knowledge from all available sources to be long life self-learners. (El-khateeb, 2012), so the educators tried to improve the teaching practices to reach to the possible degree of teacher perfection to the teaching process and achieve better learning, and they developed the teaching to achieve this, and used advanced strategies and techniques. Internet has become more and more important in our life and study. Undoubtedly, the wide spread of the Internet creates new opportunities for language learning and expands possibilities for using it. Accordingly, it supports web design skills.

The twenty first century has brought new challenges and demands in our society. Every day, these challenges have proven that population requires a higher level of competitiveness to accomplish their goals successfully in this globalized world. Hence, using technological resources as the internet and computers has become crucial for the attainment of a complete process in education. (El-khateeb, 2012). Internet now is becoming the most important tool in teaching technology course, in that it provides us with all educational resources that we need. Teachers also benefit from Internet sites as they provide support in gaining teaching techniques and approaches. Students are beneficiaries from the Internet sites as they facilitate student-centered learning process and widen their span of knowledge. We shouldn't forget the electronic classes as a distant means of following regular classes. In these days and age of MP3s, Ipods, Ipads, lab tops, and I phones the teachers sought to catch up with technology. Technology is used in education for two main reasons: as a tool for increasing the effectiveness of instruction and to integrate technology into the curriculum. Researchers are trying to answer the questions of how technology should be integrated and what the effect of this process will be on various dimensions of the teaching-learning process. One possible answer to this question is WebQuest (Gülbahar, Y., Madran, R. O., & Kalelioglu, F. (2010). WebQuests are inquiry-based activities through which students interact with resources on the Internet (Dodge, 1995) WebQuest, originated by Dodge and March in 1995, was considered to be an effective way to organize chaotic Internet resources and help learners gain new knowledge through a guided learning environment. It has been widely used in subjects such as social science, biology, English and writing. The WebQuest is an inquiry-oriented activity in which most or all of the information used by learners is drawn from the Web. It is based on constructivism, self-directed learning, collaborative learning, situated learning and scaffold learning. It can be designed for use in either short-term or long-term instruction. The aim can be either to integrate knowledge to create new objectives or to use information to criticize from many perspectives. The resources on the Internet should be carefully selected by

the instructor for both their credibility, and in order to include diverse perspectives on the topic being investigated. WebQuests are based on six stages: title, introduction, task, process, evaluation and conclusion. More recently many research reports have concluded that WebQuest can have a significant positive effect on the learning teaching process. Web Quests are an Internet based technology application in which groups of students follow a specific set of steps toward the completion of a final project on a specific subject or multi-disciplinary subject (Dodge, 1997; 1998; 2005; 2006). As with many other technologies and technology applications, there is a void in the published research that examines the effects that WebQuests have on students and student learning. Many educators are using technologies and technology applications, such as WebQuests, that have not been examined in depth for the effects on student learning. There is limited research about the WebQuest model itself.

Some research papers in the concern were conducted by (Monroe & Orme, 2003; Castronova 2002, Lou & MacGregor, 2001; Milson, 2001; Dutt-Doner, Wilmer, Stevens, & Hartmann, 2000). They all concluded that WebQuest technique has positive results on the students' performance and on their attitudes toward WebQuests. While other authors suggested that gifted students had more positive attitudes than other learners. Adding to that Milson (2001 : p. 14) reported that WebQuests have been recommended for developing higher order thinking skills. To illustrate, high ordered thinking skills are represented in analysis, synthesis, evaluation and inference. Williams & Williams (2003), Castronova (2002) and Milson (2001) showed that students - 5 - progressed from easy fact-finding to more conceptual learning during the course of a Web Quest. Monroe and Orme (2003) noted that during a WebQuest course students demonstrated use of advanced thinking skills.

II. Need Of Study

The researchers, who have been teaching a practical educational technology course in the College of Education at the Islamic University, have observed the student sever weakness in web site design skills, Through checking the results of the students in the final practical exam , they noted that there is weakness in the web site design skills, and through the researcher's reading of previous studies in the target field, they have found that using Web Quest is a source of motivation for students to learn, in addition to providing them with a wide range of information.

Significance Of Study

The significance of this study emerges from the fact that WebQuest approach has been newly introduced to the field of education. Moreover, this study it is one of the few studies that talk about the websites design skills using an inquiry-based online learning technique "webquest". The result of this research would be very useful for all educational communities in order to implement or recommend the use of webquest in all universities and schools in future. This information would be very useful to teachers or researchers who had the intention to do experimental research or an intervention to enhance students understanding about web sites design. This study will help us to develop the practical educational technology courses in faculties of education in the Palestinian universities within the electronic educational programs to keep pace with developments in the world.

III. Objectives of Study

The main objective of this study is to:

1. Create a list for web sites design skills.
2. Investigate the impact of using web quest on developing websites design skills among faculty of education students.

The study aimed at answering the following research questions:

- What are the skills needed by the students to design Web pages in Faculty of Education?
- What is the impact of using web quest on developing websites design skills between pre-performance and post-Performance to the experimental group?

Research Hypotheses

The following hypotheses were formulated to guide the study: There are statistically significant differences at ($\alpha \leq 0.05$) between the level of the experimental group performance in the beginning and the end of utilizing the WebQuest to develop websites design skills?

Theoretical Framework

The WebQuest instructional strategy is often praised as an inquiry oriented activity, which effectively integrates technology into teaching and learning. (Abbit, 2008)

The Components of a WebQuest:

A WebQuest is composed of six stages which introduce the activity to students and familiarize them with the steps of the process. These six building blocks are common to all WebQuests and serve specific purposes to ensure that transformative learning occurs.

Dodge (1995; 1997:p.2) describes the six basic parts of WebQuest :

- 1- An **introduction** provides some background information to prepare the student to lead the WebQuest program.
- 2- A **task** that is a doable and an interesting activity that allows students to learn and enhance their current knowledge by gathering information through the WebQuest. Students are exposed to an inquiry-oriented activity.
- 3- A set of **information sources** needed to complete the task. Many (though not necessarily all) of the resources are embedded in the WebQuest document itself as anchors pointing to information on the World Wide Web. Information sources might include web documents, experts available via e-mail or real time conferencing searchable databases on the net, and books and other documents physically available
- 4- in the learner's setting. Because pointers to resources are included, the learner is not left to wander through web space completely adrift.
- 5- A description of the **process**: the learners should go through a detailed description of the steps of the process which leads them to accomplish the task. The process should be broken out into clearly described steps.
- 6- Some guidance [**resources**] on how to organize the information acquired. This can take the form of guiding questions or direction such as timelines, concept maps or cause and effect diagrams...
- 7- A **conclusion** It is the closure of the quest that reminds the learners of what they've learned, and perhaps encourages them to extend the experience into other domains.

Dodge, (2001:P.7-9); Schwartz & Willing (2001:P.104); Chatel & Nodell

(2002:p.4-10); Macgregor & Lou (2005:p.162); Sanders (2006:p. 97-98); Hassenien (2006: p.42) All agreed that the components of WebQuest are the following:

- Introduction.
- Tasks.
- Process or procedure
- Resources.
- Conclusion
- Teacher page



Web site:

Is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server. A web site may be accessible via a public Internet Protocol (IP) network, such as the Internet, or a private local area network (LAN), by referencing a uniform resource locator (URL) that identifies the site.(Wikipedia,2016)

Types of Websites

Gunnit,Kh.&Raman,Kh.(2004:p.4) points out that it is possible to categorize most Websites into the following types:

1- Simple Intro Page

In this case, the Website is just a .glorified. business card. It is a "static", one page site, which provides a little introduction about the business and the contact information.

2- Electronic Brochure

This type of Website provides more information about the company and the products or services. However, it resembles an electronic brochure in that the content never really changes.

Statistics show that majority of Websites fall under this category

3- Keeps Fresh Content

This type of Website is a step above the "Electronic Brochure" Website in that the site owners take some effort to change the content on a periodic basis. Majority of such sites have a "News" or "Events" section that provides the latest happenings at the organization. The more elaborate sites will have frequent "facelifts" for the site to keep a fresh "look and feel". However, these sites are still considered "static" in that they

do not allow the Web visitors to interact with the organization in any way. The most they allow would be a contact form or request for more information. etc.

This type of Website is considered "dynamic" in the sense that it allows its Web members to perform .Online Services..

The Web visitors are encouraged to become Web members in order to gain access to the "members only" areas of the website. The login section and other services are database driven and provide the Web users with predefined services that are common to all Members.

4- Integrated with Business Processes

This type of Website provides the most functionality because the front-end services are integrated with the back-end databases. In this case, when a Web member logs-in, the Website provides them with a menu of services that are specific for them. The site recognizes the user who has logged in and then customizes the Online Services that the user can perform.

Web design:

Most discussions of Web design get off track in short order, because what people mean by the expression varies so dramatically. While everyone has some sense of what Web design is, few seem able to define it exactly. Certain components, such as graphic design or programming, are a part of any discussion, but their importance in the construction of sites varies from person to person and from site to site. Some consider the creation and organization of contentor, more formally, the information architectureas the most important aspect of Web design. Other factors ease of use, the value and function of the site within an organization's overall operations, and site delivery, among many others remain firmly within the realm of Web design. With influences from library science, graphic design, programming, networking, user interface design, usability, and a variety of other sources, Web design is truly a multidisciplinary field. (thomas,P.,2002)

Defining Web Design

According to Thomas,P.(2002:P4)There are five areas that cover the major facets of Web design:

- **Content** This includes the form and organization of a site's content. This can range from the way text is written to how it is organized, presented, and structured using a markup technology such as HTML.
- **Visuals** This refers to the screen layout used in a site. The layout is usually created using HTML, CSS, or even Flash and may include graphic elements either as decoration or for navigation. The visual aspect of the site is the most obvious aspect of Web design, but it is not the sole, or most important, aspect of the discipline.
- **Technology** While the use of various core Web technologies such as HTML or CSS fall into this category, technology in this context more commonly refers to the various interactive elements of a site, particularly those built using programming techniques. Such elements range from client-side scripting languages like JavaScript to server-side applications such as Java servlets.
- **Delivery** The speed and reliability of a site's delivery over the Internet or an internal corporate network are related to the server hardware/software used and to the network architecture employed.
- **Purpose** The reason the site exists, often related to an economic issue, is arguably the most important part of Web design. This element should be considered in all decisions involving the other areas.(thomas,P.,2002)

primary aspects to Web Design. (thomas,P.,2002:P.2)

1- Content

- To inform or persuade users

2- Technology

- To implement the function of the site

3- Visuals

- To provide the form of the site

4- Economics

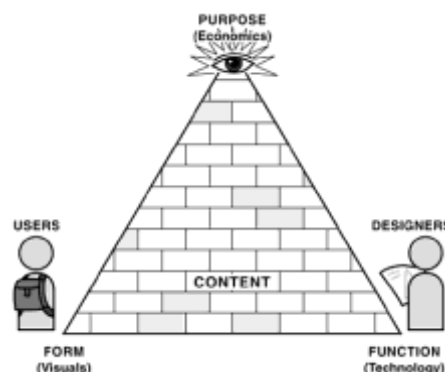
- To give purpose for the site

The influence of one aspect or another of site design varies on the project.

- Personal home page may not have economic issues
- Shopping site may be less concerned about the visuals

The Web Design Pyramid. (thomas,P.,2002)

- Metaphor of a Web site like a pyramid
- Content is the bricks we use to build the pyramid
- The foundation rests on visuals and technology
- Economics make the project worth doing
- As Web designers we try to build our “pyramids” carefully but construction is difficult because we build on the shifting sands of fast changing technology and tastes.
- Team work and a firm understanding of the Web medium is required
- Even when building a great sites our visitors may look at it with puzzlement.
- What’s the purpose they wonder. Where is the door?!



IV. Methodology

Includes the procedures followed throughout the study. It introduces a complete description of the methodology of the study, the population, the sample, the instrumentation, and the research design. Moreover, it introduces the statistical treatment for the study findings.

The Experimental Approach

The researchers adopted the experimental approach of the research. Such an adoption was due to the nature of the research which aimed at finding:“The impact of using web quest on developing websites design skills among faculty of education students”.

The Research Design:

An experimental research design was employed for this study. It is an artificial situation to test hypotheses, in which the researcher isolates the intervening factors, and study the impact of the independent variable on the dependent variables in the purpose of making sure of the correctness of certain information, or to reach the generalization that controls the behavior of the dependent variables. (Nawaf & El Odani, 2008:p.58) This design depends on choosing one group,"the experimental group".

The sample of the study:

The representative sample of the study consisted of (20) students.

The group was randomly chosen from a purposive sample from the Islamic university students where the researchers work.

Instruments and Data Collection:

This study used one instrument for the purpose of data collection, it was an observation card for measuring web site design skills, the researchers used Alpha Cronbach as a pointer to data reliability coefficient.

Table 1: (reliability coefficient of Instrument)

Scope	N	Alpha Cronbach
total summation	20	0.748

From the result, we see a high Alpha Cronbach reliability coefficient, that mean the tool is ready to use.

V. Results And Discussion

Research question 1: What are the skills needed by the students to design Web sites in Faculty of Education?

To answer the first research question, the researcher analyzed the content of Educational Technology course-practical, in faculty of education in Islamic university, and they formed the main skills to design web sites, specially "Google site" appendix (A), which is:

1. Createand use a Gmailaccount
2. Design page of the type Web
3. Design page of the type File Cabinet
4. Design page of the type Announcement
5. Design page of type List
6. Design Electronic exam
7. Format and Modification the Web site

Research question 2: What is the impact of using webquest on developing websites design skills between pre-performance and post-Performance to the experimental group?

To answer the second research question, an independent samples t-test was conducted to determine whether the mean score of the pre-performance and post-Performance to the experimental group.

Table 2: t-test independent sample results of differences between pre-performance and post-Performance to the experimental group.

Table 2: (t-test result for dependents sample)

	N	Mean	t- value	Sig	ETA square "η ² "
Pre	20	43	61.782	0.01	0.99
post	20	123.25			

From the results, the students in the experimental group showed improved in the web sites design skills, pre-skills was (mean=43, $\alpha \leq 0.05$, sig=0.01) and post skills (mean=123025, $\alpha \leq 0.05$, sig=0.01), since $0.05 > \text{sig}$, so there is differences between pro and post skills, the differences are favor for posttest with mean(123.25), also the effect of differences is very big (0.9), that mean there is an effect for WebQuest in developing webpage design skills.

VI. Conclusion

Based on the findings, derived from the results of this study, the following conclusions were reached:

1. The WebQuests strategy was very effective in motivating students towards participation and interaction.
2. The WebQuest strategy provided students with a better learning environment which reflect on their achievement in educational technology course.
3. Through the WebQuests strategy, the students played several roles as a thinker, problem solver, observer, and researcher. These roles helped them acquire and employ the web sites design skills in different situations more easily.
4. The WebQuests strategy provided students with enjoyment, pleasure, enthusiasm and variation which were significant enough to affect the students' achievement positively.

VII. Recommendations

In the light of results of the study, the following recommendations are offered:

- Under these educational developments there is a need to use the WebQuests strategy in teaching some courses of faculty of education because of its value and positive results in achieving important educational results.
- The need to embrace the WebQuest strategy in the educational process in the Palestinian educational institutions.
- The need to hold workshops to analyze and identify curriculum units that can be used according the WebQuest strategy.

- The need to hold training courses to develop web sites design for each of universities students, teachers, mentors in education institutions.

References

[1] Abbit, J., & Ophus, J. (2008). What we know about the Impacts of Web-Quests: A review of research. *AACE Journal*, 16(4),441-456.

[2] Byung-Ro Lim, Jonathan A. Plucker and Barbara Bichelmeyer(2003). Learning by Web Design: How It Affects Graduate Student Attitudes, *College Teaching*, Vol. 51, No., pp. 13-19 from: <http://www.jstor.org/stable/27559121>

[3] Castronova, J. (2002). WebQuest in wonderland: The eighth grade comes to the edge. *Learning & Leading with Technology*, 30(1), 22-27.

[4] Dodge, B. (1998). WebQuests: A strategy for scaffolding higher level thinking. [Internet]. Retrieved September 12, 2011, from <http://webquest.sdsu.edu/necc98.htm>

[5] Dodge, B. (2001). FOCUS: Five rules for writing a great WebQuest. *Learning and Learning with Technology*, 28(8), 6-9, 58.

[6] El-Khateeb, Evon.(2012). The Impact of Using WebQuests on the Palestinian Seventh Graders' English Reading Comprehension Skills and their Attitudes towards WebQuest. Master Thesis, Islamic University, Gaza, Palestine.

[7] Gülbahar, Y., Madran, R. O., & Kalelioglu, F. (2010).Development and Evaluation of an Interactive WebQuest Environment: “Web Macerasi”. *Educational Technology & Society*, 13 (3), 139–150.

[8] Gunnit,Kh.&Raman,Kh.(2004). Website Design Methodology.E-book. From: http://www.cyzap.com/CYZAP_Files/_Items/CZAP-MR-LINK-167/docs/CyzapWebsiteDesignMethodology.pdf

[9] Kurt,Serhat(2012).Issues to Consider in Designing WebQuests: A Literature Review. *Interdisciplinary Journal of Practice, Theory, and Applied Research*, Volume 29, 2012 – Issue 3.

[10] Lou, Y., & MacGregor, K. S. (2001). Learning with Internet resources: Task structure and group collaboration. In R. S. Burkett, M. Macy, J. A. White, & C. M. Feyton (Eds.), *Preservice teacher education: Proceedings of SITE 2001*. Norfolk, VA: Association for the Advancement of Computing in Education. Retrieved September 24, 2003, from ERIC database (ERIC Document Reproduction Service No. ED457833).

[11] Milson, A. J. (2001). Engaging students in historical inquiry using Internet resources. Paper presented at the National Council for the Social Studies, September 25, 2011 , from ERIC database (ERIC Document Reproduction Service No. ED 462360).

[12] 12- Monroe, E. E., & Orme, M. P. (2003). The nature of discourse as students collaborate on a mathematic WebQuest. Retrieved September 6, 2003, from center.uoregon.edu/con/necc_pdf_upload/necc2003_RP_handouts/MONROEOrme.pdf

[13] Sanders, J. (2006). *E-learning for GP Educators*. United Kingdom: Radcliffeoxford Publishing.

[14] 15- thomas,P.(2002).*Web Design: The Complete Reference*. Book, Published by Osborne/McGraw-Hill, from <http://www.goodreads.com/book/show/3479084-web-design>.

[14] Williams, S., & Williams, E. (2003). Wild about WebQuests: Using WebQuests in the classroom and loving them. Presentation to the Georgia Association for Gifted Children, March 14, 2003. Retrieved September 18, 2003.

Appendix A: An observation Card for measuring web site design skills

Main Skills	Performance Indicators	performance level			
		high	Moderate	weak	
Create and use a Gmail account	1- To create E-mail using Gmail				
	2- Login using a Google account				
	3- Create your Google Site using https://sites.google.com/				
	4- Create main page inside the web site				
Design page of the type Web	5- Create several Sub Pages on the web site				
	6- Determine the type of page (Web, Advertisement, Store Files, List)				
	7- Edit on Web Page				
	8- Add content on the Home page				
	9- Text format on the page				
	10- Insert picture on the page				
	11- Add a hyperlink on the page				
	12- Insert Map on the page				
	13- Insert Calendar on the page				
	14- Insert Video (You tube) on the page				
	Design page of the type File Cabinet	15- Create Page from Type file cabinet			
		16- Create new folder			
		17- Adds several Files on the folder			
		18- Re-arrange the Files on Folders			
19- Delete a file or Folder					
Design page of the type Announcement	20- Create a page Type Announcement				
	21- Add new post on the page				
	22- Insert Educational Video from YouTube on the post				
	23- Create several posts for many Educational Videos				
	24- Add comment on the post				
	25- Delete post				
Design page of type List	26- Create a page Type List				
	27- Create a special list on the page				
	28- Edit the list				
	29- Delete the list				
Design Electronic exam	30- Create electronic exam using Drive service				
	31- Edit On Electronic exam				

	32- Insert Electronic exam On Web page			
	33- Delete the Electronic Exam from Web page			
Format and Modification the Web site	34- Change Page layout			
	35- Re-arrange the Web Pages			
	36- Insert a Logo on the head of the page			
	37- Add Footer to the Page			
	38- Edit on Sidebar by adding Other Contents to it other than the pages			
	39- Change (width, area) Sidebar			
	40- Move the pages from the sidebar to Horizontal Bar And vice versa			
	41- Change the text format and Colors on the page			
	42- Choose Appropriate theme to the Web Page			
	43- Add Colored background to the Web Page			