Pre-Service Teachers' Opinions about the Use of Web Adventure in the Course of Introduction to Computer

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Abstract: Within the present study, the opinions of the 1st year students from the department of mathematics teaching about the use of web adventure in the course of introduction to computer were investigated. The study group of the present study consists of 40 pre-service teachers. The students created groups of 2 or 3 students. The groups were asked to determine the characteristics to be possessed by a good teacher and then to make some comments and create graphs related to these characteristics. The students' comments and graphs were organized in a presentation program and then presented to their classmates. At the end of the application, a data collection tool aiming to elicit the students' opinions about the application was administered. The data collected were analyzed by two evaluators. And as a result, it was found that web adventure is a different and effective method and can be used in various courses by means of some enrichment.

Key Words: *web adevnture, pre-service teacher, mathematics teaching*

Introduction

In today's world, people can have access to incredible amount of information just by one click. This information is available for everyone. Yet, as the information is too much, students and teachers may experience some confusion and despair. Hence, there is a need to be cautious about the activities to be designed through web and much consideration should be given to create quality and appropriate activities. As the resources and steps of the activities to be designed by Web Adventure are under the control of the teacher, the process will be much more orderly for students and the teacher (Crawford and Brown, 2002).

Web Adventure is a tool developed by San Diego University in 1995 to have regular and meaningful information on Internet. The application was developed by Dodge and then its content was enhanced by March. According to Dodge (1998), Web Adventure provides access to internet resources, is group work-centered, and allows researching and using high level thinking skills. March (2003) points out that web adventure can make great contributions to the development of deep understanding of students, and helps them to be more autonomous and learning-centered. According to Polly and Ausband (2009), web adventure is a popular means of using technology in class.

According to Dodge (1998), web adventure represents inquiry-based activities for which all or part of information is received from the resources on internet. Through these activities, it is aimed that students interact with the resources on internet and learn from them. Two different types of web adventures can be designed depending on their time span. Short-term web adventure is limited to three class hours. Here, the purpose is the acquisition and integration of information. Long-term web adventure can last for one week or one month. Here, the objective is to expand and internalize information. Long-term web adventure is influential on many different types of thinking skills. Marzano (1988) states that long-term web adventure includes many thinking skills such as comparison, classification, induction, detection, analysis of mistakes, consolidation, abstraction and

analysis of different viewpoints. Dodge (2008) states that for the application to be successful, it should encompass the following sections:

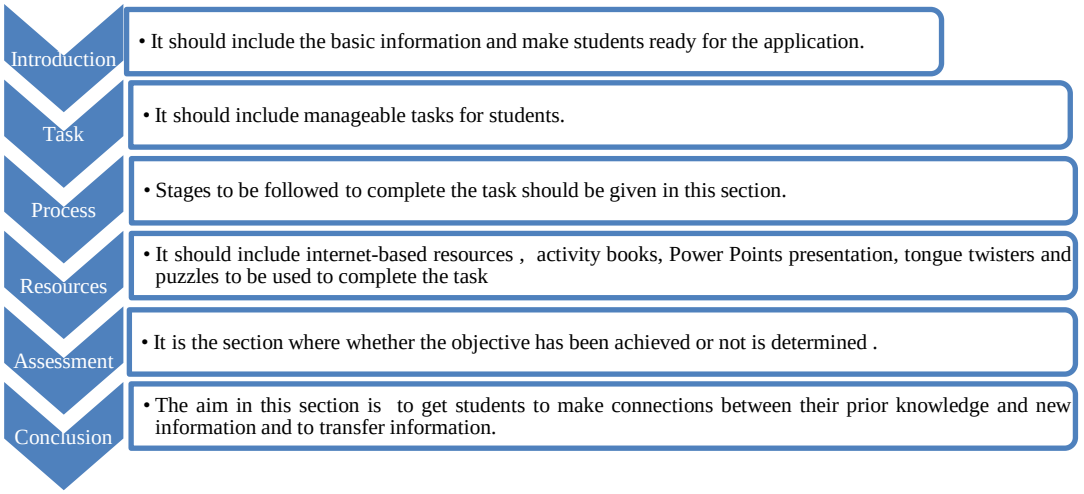

Figure 1. Sections of web adventure

The effects of web adventure on students have drawn the interest of many researchers and become the subject of many studies. When the literature was reviewed, it was observed that the effects of web adventure on higher level thinking skills, efficiency of students, teachers' perceptions and opinions were widely investigated. The results reported in the literature show that web adventure activities have positive effects on students (Halat and Jakubowski, 2001), provide students with real life activities (Crawford ve Brown, 2002), increase motivation and make contributions to the development of skills required to work on internet and have access to resources (Hassanien,2006) and pre-service teachers have positive attitudes towards the use of web adventure for educational purposes (Halat, 2007; Zheng, Stucky, McAlack, Menchana and Stoddart, 2005). The research mostly focuses on the teaching of mathematics and very limited number of studies looking at the effectiveness of web adventure in teaching of computer course was encountered in the literature.

The present study investigated the effects of web adventure used in a computer course on the students' opinions and moreover, responses to the question of what kind of characteristics can be added to make web adventure more effective were sought. The present study aims to determine the opinions of first-year pre-service mathematics teachers about the use of web adventure in a computer course. In this respect, the study seeks answers to the following research question:

1. What is the contribution of working with web adventure to students?
2. Addition of which characteristics to web adventure site can make it more effective for students?

Method

The opinions of the students about the application make up the basis of the study. Hence, this is a case study, which is one of the quantitative research designs.

Participants

The present study was conducted with the participation of the first year pre-service mathematics teachers taking computer course at the Education Faculty of Aksaray University in 2010-2011 academic year. The participants were selected out of the students who were taught by the researcher so that they could be observed throughout the application and they could seek help when they met any problem. The study was initiated with 47 students and then 7 students were excluded as they did not participate in the lessons. The students conducted the application first by doing individual activities and then working in groups. The groups consisted of 2 or 3 people.

Data Collection Instruments and Data Analysis

The opinions of the students about the application were collected through an interview form developed by the researchers. The form consists of 3 open-ended questions. The questions developed by the researchers were firstly refined based on the opinions of two experts and then administered to the students. In the analysis of the students' opinions, content analysis was employed, which is one of the qualitative research methods.

Application Process

Before the application, the students were informed about web adventure and the web site, which was already designed, was introduced. The students were given three weeks to complete the task. In the introduction section, within the framework of the computer course, the students were expected to make a presentation by using word processor, electronic graph and presentation program. The students were also asked to determine the characteristics to be possessed by a good teacher and explain why these characteristics should be possessed. During the application, the students were given the steps to be followed to complete the task.

In the second week, the students were asked to compare the characteristics expressed and analyze which characteristic was used by how many participants and then plot the findings on electronic graph program and send them to the course advisor through e-mail. In the scale used in the assessment section, the students' efficiency of using the software program, the coherence of the content, spelling and punctuation errors, originality of the product and presentation skills were evaluated and scoring was determined. The scores were assigned ranging from "very good (4)" to "poor (1)".

In the resources section, articles discussing teacher characteristics, manuals of office programs and office utilization animations were included. They were asked to work by using these resources. In the conclusion section, the students were given support for the task they carried out and brief information was given about the benefits of this process.

Findings

In this section, analyses of the data collected through the data collection instrument are presented. The students' opinions were analyzed by two different evaluators. The analyses revealed that there is a high degree of reliability between the evaluators ($r = .91$).

Students' Opinions about the Contribution of Web Adventure

The students' responses to the question "What is the contribution of working with web adventure to you?" asked in the form of web adventure student opinions form were classified under eleven categories. High majority of the students (85.0%) think that working with web adventure has positive contribution to them. Among the contributions of working with web adventure are there internalization of information (47.0%), increasing motivation (17.0%), felling happier (2.5%) and focusing on the information related to the topic at hand (2.5%).

Table 1: Students' opinions about the contributions of web adventure

Statement	Frequency (f)	Percentage %
It has contribution	**34**	**85**
Internalization of information	19	47
Motivation	7	17
Real problems	6	15
Idea sharing	4	10
Opportunities to work on internet	4	10
Group works	4	10
Applied learning	3	7,5
Recognition of shortcomings	2	5
Happiness	1	2,5
Focusing on resources	1	2,5
No contribution	**6**	**15**
Total	**40**	**100**

Some of the students think that this application did not have any contribution to them at all (15.0%). This may be because of the fact that the students had not studied with such applications beforehand.

Students' Opinions about the Problems Encountered in Web Adventure

"Did you encounter any problems while carrying out web adventure project? If your answer is YES, explain the problems". Majority of the students stated that they had no problem during the application (57.5%). Most of the problems encountered stemmed from computer and internet connection (27.5%). The students stated that if they had personal computers, they would perform their task better.

"I encountered some problems. As I did not have a computer, I could not read all of the resources."

Table 2: Student opinions about the problems encountered during the application

Statement	Frequency (f)	Percentage (%)
I did not have any problems	**23**	**57,5**
I had some problems	**17**	**42,5**
Technical problems	11	27,5
Unfamiliar application	4	10
Inadequate information	3	7,5
Group works	2	5
Insufficient office facilities	1	2,5
Time	1	2,5
Total	**40**	**100**

As the web adventure is new in our country and it is not frequently used in classes, the students are not familiar with the application. Therefore, some students felt unfamiliar to the steps of the application (5%).

Student opinions about how to enhance the effectiveness of web adventure

The students' responses given to the question "What should be added to web adventure site to make it more effective and useful? Explain your suggestions." were classified under nine categories. Majority of the students think that there is no need to add something (67.5%). According to the students, enhancing the visual characteristics of the web site is one of the elements that can improve its effectiveness (25.0%). There are some students stating that resources should be shorter because reading the resources given is too time-consuming (17.5%).

Table 3: Student opinions about how to enhance the effectiveness of web adventure

Statement	Frequency (f)	Percentage %
There is no need to add something.	**13**	**32,5**
There is a need.	**27**	**67,5**
To improve visual characteristics	10	25
Shorter resources	7	17,5
Detailed process	3	7,5
Enhancing the visual	3	7,5
Sample application	2	5
Office resources	1	2,5
Different design	1	2,5
Guidance	1	2,5
Total	**40**	**100**

Discussions and results

The present study investigated the students' opinions about web adventure used in a computer course. In light of the findings, it can be argued that majority of the students have positive opinions about the administration. This is because they believe that web adventure increases motivation, provides opportunities to work with technology, includes various activities and allows group works. However, some problems such as lack of computers and internet connection failures affect the students' opinions about the process negatively. Such problems may result in the students' developing negative attitudes towards the use of such applications in their future classes. When the students' opinions about how to enhance the effectiveness of the application are investigated, it is seen that enhancing visual characteristics and presenting shorter resources are believed to make it more effective. Moreover, the students think that addition of detailed guidance and sample applications will also improve the efficiency. Future researches to be conducted on web adventure can be carried out in such an environment with better computer and internet infrastructure, and they should use web adventures having more visuals and shorter resources.

References

Akçay, A. & Şahin, A. (2009). *Webquest and Usability of Turkish Language*. International Congress of Educational Research, Çanakkale/Turkey. Web: http://oc.eab.org.tr/egtconf/pdfkitap/pdf/79.pdf

Akçay, A. (2009). *Impact of WebQuest Learning Environment on Academic Achievement and Attitudes of Students.* Unpublished Master thesis, Atatürk University, Erzurum.

Crawford, C. M. & Brown, E. (2002). *Focusing Upon Higher Order Skills: WebQuest and The Learner Centered Mathematical Learning Environment.* Web: http://www.eric.ed.gov/PDFS/ED474086.pdf

Dodge, B. (1997). *Some Thoughts About WebQuests.* Web: http://webquest.sdsu.edu/about_webquests.html

Dodge, B. (2001). *FOCUS: Five Rules for Writing a Great WebQuest.* Web: http://babylon.k12.ny.us/usconstitution/focus-5%20rules.pdf

Halat, E. (2007). Views of pre-service elementary teachers on the use of webquest in mathematics teaching . *İlköğretim Online, 6*(2).

Halat, E & Jakubowski, E. (2001). *Teaching geometry using WebQuest.* International Conference on Technology and Education, Florida/USA. Web: http://www.icte.org/T01_Library/T01_227.pdf

Hassanien, H. (2006). An evaluation of the webquest as a computer-based learning tool. *Post-Compulsory Education*, *11*(2).

March, T. (2003). *What webquest are (really).* Web: http://bestwebquests.com/what_webquests_are.asp

Marzano, R. J. (1992). *A different kind of classroom: Teaching with dimensions of learning*. Web: http://www.eric.ed.gov/PDFS/ED350086.pdf

Öksüz, C. & Uça, S. (2010). Using Webquest Elementary School Mathematics Lessons: A Video Case Study . *E-Journal of New World Sciences Academy, 5*(4).

Polly, D. & Ausband, L. (2009). Developing Higher-Order Thinking Skills through WebQuests. *Journal of Computing in Teacher Education,, 26*(1).

Summerville, J. (2000). WebQuests An Aspect of Technology Integration for Training Preservice Teachers. *TechTrends*, *44*(2).

Yıldırım, A. & Şimşek, H. (2008). *Qualitative Research Methods in Social Sciences (6.Edition).* Ankara: Seçkin Pub.

Zheng, R. Stucky, B. McAlack, M. Menchana M. ve Stoddart S. (2005). WebQuest Learning as Perceived by Higher-Education Learners. *TechTrends*, *49*(4).