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A Web-Quest as a Teaching and Learning Tool

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ABSTRACT

The aim of the article is to find out the extent of the web-quest`s efficiency as a teaching and learning tool. In this regard, the research was conducted on secondary level of one of Kazakhstani school gymnasium.The results shows that although a web-quest fairly assisted to gain the lessons` goals, it was perceived to be a quite useful for facilitating knowledge attainment and supporting a problem-based learning, group work as well as interaction of the students. The teacher stated that a web-quest assisted to create a learning environment, fostered critical thinking skills, creativity and had a motivational effect on learners. The findings proposed that for the successful implementation of the web-quest in teaching and learning practices, more accent should be made on teachers afford. The teachers should be aware of the potential of the software to address the class` set goals. The focus should be made on the contents of

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Information technology, teaching, learning, constructivist learning approaches, creative thinking

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Introduction

The purpose of this paper is to determine the extent to which a web-quest software adoption in the class facilitates effective teaching and learning. The assignment results are based on the empirical research conducted in secondary school gymnasium in Kazakhstan. The school is located in one of the main cities of the country and it is one of the highly regarded schools in the city. To meet the world standards of education, the school in line with the government`s educational policy is engaged in informatization process, which is associated with the creation of the uniform information-educational area within state-participants of Commonwealths of Independent States (CIS).

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The collapse of the Soviet Union and achievement of independence were followed by the social and economic as well as political instability in Kazakhstan in 1991. This negatively affected the secondary education sector of the country. There was a considerable reduce of the state funding for education and migration of the teachers abroad, which caused a decrease of education quality and restriction in the scope of secondary education development (Kurmanalina, 2007). Thus, in the beginning of the 90s the informatization was limited to computerization of the schools. Only 10% of the schools in the state were provided with computers and they were adopted only for drawing up the algorithms on ICT classes. Sufficiently stable economy and quickly developing infrastructure in the late 90s allowed the country to reconsider the priorities in education. In 1997 there was adopted a state programme of Education informatization. It has a purpose to promote and facilitate self-development, self-improvement and self-education of the students by means of technology. In 2001, the 100% schools in the country were equipped with computers and by 2003, 23% of them were provided with internet connection. There were 1 computer for 10 students in large schools and 1 computer for 62 students in the country in general. Though, these results were the best among the CIS countries. For example, for that period in Azerbaijan there were more than 1000 students on 1 computer, in Kyrgyzstan — 946 and in Tajikistan this figure reached to 1400 students. But the provision of the schools with ICT tools has been restricted to multimedia (1/7 of the schools) and interactive board since 2008. (Saduakasova, 2008).These tools are not widely spread and used among teachers. Even though they are adopted, the teachers are unaware of ICT tools potential in facilitating effective teaching and learning. Some teachers are unfamiliar with computers or find it difficult to implement technology in the class (Ismagulova, 2009). While being quite popular and easily approachable, a web-quest software promises a supportive and authentic learning environment, inquiry-based learning and development of intellectual skills of the learners. Thus, the rationale for the study is to see how a web-quest will be applicable in Kazakhstan secondary school context and if it can facilitate effective teaching and learning.

The theoretical consideration of a web-quest as a teaching and learning tool would be explored in the next section.

Literature Review

“Everything that teachers do in their planning and their teaching, as well as most of their interactions with their pupils, is centered on the idea that children learn in certain ways and that teachers plan and design activities to take advantage of this”. Thus, in 1980s computers adoptions in UK schools were inefficient. They were only reproductions of old and out-of-date perspectives that teachers used to employ. This necessitated the revision of potentials of technology implications in teaching and learning (Pritchard, 2007, p.1), which would be considered in further paragraphs.

According to the literature, an information technology being a flexible intellectual tool contributes to gaining a vast scope of resources, encourages students intellectual development, creativity as well as an interaction in the class (Davis et al., 1997). Computer and internet have encouraging and authentic effects on learning. As they could provide a lively illustrations and a

familiar setting for learners which makes learning much more effortless (Selinger,1999). In addition, the internet has an enormous potential to develop "basic skills" of the students (Pachler and Williams,1999, p.52). Its arbitrary nature assists in advancing skills of exploring and approaching the web-based materials. At the same time, even if technology might not alter the teaching, but it has a potential to improve teaching. In addition, computer and internet adoption in the class causes less instructional difficulties (Selinger,1999). However, the teachers are more likely to employ a technology in simple activities such as typing, web searching and interaction as well as preparation than for teaching and learning (US Department of Education 2003, Russel et al., 2003 cited in Wang and Hannafin, 2009, p.218). Even though, there is a significant increase of ICT resources implications in the class since 2005 in UK school context, this mainly applies to white board utilization. Thus, beyond the class activities, ICT adoption is restricted to a word processing and web browsing. These instruments are considered to be "deceptively transparent", whereas other technologies are conceived to be more complicated. As a result, technology utilization for the data analysis and problem solving purposes is restricted, particularly in secondary schools. Teachers are less likely to exploit new technologies to promote group work (Sutherland et al., 2009, p.4). Even though, different computer software types are utilized in schools, they commonly ignore the practices for students to support inquiry. Thus, an instructional programmed software is directed to obtaining facts than involving learners in problem-based activities (King, 2003). Therewith, technologies themselves are not imperfect. They are limited by shortcomings. For instance, provision of vast resources by internet might cause the data overstressing or different extra distractions for students (Selinger, 1999). This can lead to confusion among students in analyzing the approached data.

To decrease some of the above stated obstacles and make technology, particularly internet useful teaching and learning tool, the literature suggests the following solutions. They are creation of an educational framework (Pritchard 2005 cited in Pritchard 2007) by providing appropriate resources and direction the learner`s search in the internet through giving the links to pre-chosen sites (International educator, 2010). This could be facilitated by a web-quest software. It is praised for being efficient in class implication (Abbit and Ophus, 2008). A Web-quest, invented by Bernie Dodge and March at San Diego State University in 1995, is an "inquiry-oriented" activity that encourages students to work mainly or entirely with the web-based data (Dodge, 1997, 1998, 2007). It is considered to become very popular among teachers for being easy in application (Wang and Hannafin, 2009). "A brief scan of the first 1,000 Google hits (out of over a million), as well as an informal review of current introductory textbooks on information technology in education, revealed that nearly everyone writing about web-quests is highly supportive of their use" (Maddux and Cummings cited in Polly and Ausband, 2009, p. 29).However, the issues of using a web-quest in secondary school context is less considered than its general implication in school (Lipscomb, 2003).

There are two stages of a web-quest, which aim different educational goals. If a short-term level (1-3 days) supports the acquirement of the knowledge, then a long-term (more than 3 days) level aims to widen and improve it (Dodge, 1997).

Web-quest of either above stated levels consists of the following elements:

1. An ***Introduction*** which gives a background data;

2. A ***task*** consists of a designed assignments, which are tend to be inspiring ;

3. A network of ***information resources*** required to undertake the tasks. They are links to the data in the World Wide Web or attached documents;

4. An explanation of the ***process*** learners should undergo in carrying out the assignments;

5. Some ***guidance*** on how to arrange the data is provided. This could be directing inquiries or guidance to fulfill the tasks, maps or diagrams;

6. A ***conclusion*** that gets to the end of the quest. It recalls the learners what they have learned and sometimes tends to enlarge learners` practice in other areas (Dodge,1997).

"A Web-quest is a student-centered and project-based approach to teaching and learning, which is based on a variety of theories, such as constructivist philosophy, social constructivism, critical and creative thinking, situated learning environments, cooperative learning as well as the engaged learning"(Lamb and Teclehaimanot cited in Halat, 2008. p.109). A constructivist theory puts forward conception and emphasizes on creating a conception upon a previous "knowledge, understanding and skills" (Pritchard, 2009, p.17) by means of dynamic social communication. Through this process, learners construct their own understanding and ways of perceiving the reality (Biggs, 1993 cited in Chalmers and Fuller, 1996). Knowledge and concept are created within an accepted social framework. (Chalmers and Fuller, 1996). While social communication between the learner and the environment are one of the key issues in the social constructivism. It considers a learner`s previous conception as a foundation to creating a discussion. It emphasizes the importance of scaffolding and group working (Pritchard, 2009).Below stated features throw the light on constructivism and social constructivism theories effects on a web-quest implication in the class.

First, a web-quest in line with a constructivist theory tends to promote realistic assignments and an authentic environment as a consequence (March cited in Brucklacher and Gimbert, 1999, p.41). In other words, the tasks encourage learners to deal with the certain than abstract situations regarding the subject issues (Jonassen, 1991 cited in Murphy, 1997). The web-quest assignments require students to use their constructed knowledge, understanding and skills in new conditions to attain new knowledge, understanding and skills (Pritchard, 2009).Thus, Lipscomb (2003) asserts that a web-quest`s tasks are feasible .

Second, a web-quest creates a learning environment which requires students to be "active learners" (Halat, 2008, p.110).Thus, providing a wide range of resources, a web-quest encourages them to analyze key data and determine a relevant information (Gorrow et al. cited in Abbit and Ophus, 2008).Then, it inspires learners to consider issues from different perspectives Lipscomb,2003).Which could enhance students understanding and attitude on the subject (Altstaedter and Jones (2009) p. 652). Next, a web-quest promotes

interaction among learners (Dodge, 2007). This helps students to bring their conceptions to the foreground and to "become explicit about their own understanding by comparing it to that of their peers" (Hoover, 1996). The last stated features also reflect on the ideas of a social constructivism. Its Implication in web-quest adaption will be discussed in the next paragraph.

Reflecting on social constructivist vision of learning, a web-quest promotes a scaffolding process Lipscomb (2003), which associates with a relevant support for student`s learning (Pritchard, 2009). The organization of the web-quest supports students` fulfillment of the tasks by providing particular learning conditions (Lipscomb, 2003). Pre-prepared web-quests with attached sources and assignments facilitate internet-browsing process of the students (p.103).Thus, it "narrows and directs students' web searches" (Vidoni and Maddux, 2002).

Furthermore, there are following advantages of a web-quest as a teaching tool. It is an extra evaluation technique, which underpins students` inspiration, develops creativity, Hallat (2007) and improves higher-order thinking skills of the learners (Dodge, 2007). Additionally to a "web searching skills", a web-quest leads to development of academic abilities (Vidoni and Maddux, 2002, p.103) and critical thinking skills of the students (March cited in Brucklacher and Gimbert, 1999, p.41)

However, simply adopting ICT as well as a web-quest into the school will not initiate learning improvement nor will pass the liability for teaching to the technology, as the teacher is a core element to its effective adaption in the class. The teacher is the one who builds "bridges between incidental and intended learning" and makes teaching and learning efficient. "Effective teachers can use technology as a tool to engage students and promote inquiry, it is more an artifact of the way the teacher uses the technology than an outcome of the technology`s instructional design" (King, 2003, p.4). Thus, the teacher`s role in supporting learning in line with constructivist and social constructivist theories is crucial. For instance, to support scaffolding process, the educator carries out the followings in an arranged way: encourages discussions and keeps it in progress. The teacher involves groups and individual learners into interaction and promotes the advance of conception (Pritchard, 2009). The extent of teachers` awareness of technology`s potential regarding certain learning outcomes and implemented environment could indicate its usefulness in the class (Sutherland et al., 2009, p.27). Thus, inadequately difficult assignments or uninteresting topic within a web-quest prepared by the teacher could lead to a loss of interest of the learners (Hallat, 2008). According to some study findings, there were cases when a web-quest could not facilitate to keep students motivation for a long time. The students were uninspired to utilize it in several weeks (Murray cited in Abbit and Ophus, 2008). Further, "students are expected to follow the directions on the WebQuests and visit the reliable links selected by the teachers to get new information. Therefore, students may not return to the WebQuest portals to complete their work if they are distracted by other Web sites that they find more appealing" (Hallat, 2008, p.111).Finally, being one of the ICT tools, a web-quest inherent some of its restrictions. Thus, lack of equipped computers, finance and low level of internet connection might be barriers in using a web-quest adequately in teaching and learning (Pachler and Williams,1999).

In conclusion, the literature suggests that a web-quest software is a highly beneficial teaching and learning tool. It is an inquiry-based learning technique and founded on different concepts as well as constructivist and social constructivist theories. A web-quest encourages critical thinking skills and creativity and contributes to creation of supportive learning and authentic environment. It promotes interaction among students, had an inspiring effect on learners and provide feasible assignments related to a real world. However, the only fact of a web-quest software introduction in the class cannot assure effective teaching and learning. Dealing with the internet, a software could facilitate an intended learning, but it is the teacher who assists to turn an incidental learning into a purposed learning. The teacher is the one, who promotes constructivist and social constructivist learning approaches utilizing a web-quest in the class, but not the software on its own.

The weakness of a web-quest are less considered than its strengths. It is criticized for not being able to keep learners motivation and prevent learners from being distracted by irrelevant internet web sites. In addition, like any kind of technology it could be restricted by inadequate internet connection and lack of resources.

The literature review provided above has created a foundation for the empirical research considered in the following sections.

Account of a teaching

A teacher and the 3 student participants in the 9th form volunteered to take part in the study out of 23 students enrolled in world history class in the secondary school in Kazakhstan. As the approached school and respondents were in distant location the author provided the teacher with paper, on-line and video resources concerning a web-quest and its implication in the class. The author and participant teacher collaboratively designed a web-quest on particular theme in Kazakh. In order to facilitate an adequate employment of a web-quest in line with constructivist and social constructivist theories, there were supplied additional instructions on utilization of this technique in the class. Due to limited scope of the research and consequently physical absence of the author in the classes, below stated account of teaching is based on teacher`s written report of undertaken classes.

A web-quest was employed on facultative classes of world history subject in the IT room. Due to a slow internet connection on approached school computer, there were conducted two “45 minutes” lessons instead of one “45 minutes” class. In addition, the lack of computers connected to internet in the school made a teacher to assign three participant students to one computer. Before conducting the classes, the teacher through brief questions helped students to revise the previous lesson issues. In introduction using projector and power point software the teacher explained how to approach a pre-designed web-quest and gave a brief notion of each section of the technique. The teacher discussed the questions raised by the students. After the introduction the students were asked to log on the computer, approach the software and to explore all the sections. There were given 4 tasks in the web-quest and the students were demanded to complete 2 of them per a class. The assignments were supposed to be fulfilled collaboratively.Thus, the students were encouraged to have a discussion with each-other regarding the tasks.

The research approach adopted to define participants perceptions and attitudes on using a web-quest in the class and study findings are considered in further sections.

Methodology

A quantitative research approach was employed in the study. Because the quantitative research paradigm is appropriate for defining and explaining mode of different phenomena (Muijs, 2004, p.7) like technology implication in school (Picciano, 2004, p.53). Comparing to a qualitative research approach a quantitative research paradigm has a benefit to evolve the laws which promote description and foresight of educational phenomena (Bryman, 1988; Smith, 1983 cited in Fairbrother, 2007 p.41. The "researchers consider such laws to be universal, regardless of differences in time or place. Laws accordingly make it possible to explain and predict relationships between phenomena across contexts" (Fairbrother, 2007, p.41).

Thus, to attain a view of a web-quest employment in a secondary school in Kazakhstan through the perceptions of teacher and students, a questionnaire was used, which is widely held within the quantitative research methods. Being economical, this approach is considered most suitable to approaching respondents in remote locations (Opie, 2004, p.95).

Its advantage lies in less time demand conditions for respondents to fill in a form as well as for researcher to examine the gathered data (Denscombe, 2004 2nd ed). The questionnaire mainly consists of fixed and closed questions which facilitates getting answers in short period of time. Pre-coded responses for closed questions make the data analysis easier and less time-consuming (Dornvey, 2003). Questionnaire potentially could guarantee confidentiality to respondents and facilitate to design questions for particular aims. In addition, according to Opie, 2004 "there is no other more reliable and valid method which could be used" (p.95).

However, this approach has its disadvantages. Restricted option of the questions and fixed responses in the questionnaire could lead the respondents forward the "line of researcher`s idea" (Denscombe, 2004, p 160). Robson (2002) asserts that the replies of the respondents could be guided by their "personal qualities such as motivation, knowledge and personality" as well as personal conceptions but not by the real perceptions of the subject (p.233). The physical absence of the researcher in the process of the form fulfilment restricts awareness of responses authenticity (Dornvey, 2003).

In addition, questionnaire is more focused on fact searching rather than on causative connections among phenomena. Thus, being able to provide responses to such questions as What? Where? and How?, questionnaire hardly could assist to find answer to a question like Why? (Bell, 1999:14 cited in Opie, 2004, p.95)

The questionnaires were undertaken through internet-based software application Monkey survey. The respondents` awareness of a Monkey survey software was taken into consideration. Further, there was employed a convenience or availability sampling. This form of sampling is suited when the researcher has very little impact on who is involved in to the study or in case when respondents are chosen for being easy to approach (Pole and Lampard.,

2002, p. 35). But, the sample attained by convenience sampling is potentially unrepresentative, which makes it unsuitable for generalization to populations (Pole and Lampard, 2002, p 35). Thus, this study is limited to a volunteer teacher and three students in the ninth form in secondary school in Kazakhstan. The study group included 2 boys and one girl of 16 ages as well as a teacher. Since the author underwent an internship in this school for two months, she has not experienced any obstacles in approaching the sample population. Good relationships with the teacher and high interest and enthusiasm of the teacher and students to use a web-quest software in the classroom ensured a smooth realization of research procedures. In addition, a delivery of the questionnaire through a Monkey survey software facilitated the respondents to fill it out quickly and conveniently for them on computer in the classroom.

The questionnaires were designed according to a research issue and in line with a literature. There were developed questionnaires for teacher and students. The students were asked the similar questions while teacher`s versions were different. It took from 3 to 5 minutes the questionnaires to be filled out by the participants. There was an attempt to avoid leading, complicated and sensitive questions in questionnaire design (Practical research for education, 2006, p.8-9).

Even though, quantitative research approach facilitated to explain and describe the state of investigated phenomena, the research design had particular restrictions. The study was based on one research approach, which limited exploring a broad conception of the subject and reliability of the results. An employment of mixed methods paradigm or triangulation of the data by two different techniques could decrease the ambiguity in interpreting the information (Webb 2000 cited in Gray, 2009, p.204) and assists to attain wide insight of the research matter (Hanson et al., 2005 cited in Gray, 2009, p 204). Thus, "triangulation involves only a minimum of two vantage points or datasets to tell us something about a third phenomenon" (Gorard and Taylor, 2004, p.43). But accessible time and resources restricted the extent of the study and only questionnaire was utilized in the research.

Ethical issues

Before conducting the study there was received approval to the research from head of the school, teachers and children as well as their parents. There was provided an information about the aims of the study and was guaranteed a voluntary attendance as well anonymity of the respondents (Gray, 2009). Due to an employment of the questionnaire, where personal details were not asked, there was an attempt to provide a total anonymity to students. The fact that the author knows the participant teacher personally makes it difficult to ensure full confidentiality for the teacher. But the participants were assured that provided information would be kept confidential and any details which might reveal their identities would not be used.The ethical principle of informed consent, ensuring the participants rights to make a choice to attend the study or not, was appropriately referred (Oliver, 2003). The questionnaires avoided sensitive themes or any kind of potential harm to participants (Gray, 2009) and defined important findings outlined below.

Findings and Discussions

The findings of the study defined that using a web-quest in the class fairly facilitated to meet set goals of the lesson, despite the fact that a teacher and students first time adopted an internet-based software in the class. It was quite useful for a teacher and the students. While the students found a web-quest helpful tool for gaining a new knowledge. Teacher stated that a web-quest had a significant inspiring effect on students, developing creativity and creating supportive learning environment. 2 out of 3 students conceived utilized web-quest software to be very interesting. These findings partly supported Hallat`s view that a web-quest develops students creativity and has an encouraging impact (Hallat, 2007). All respondents a teacher and the students found it very easy to utilize a web-quest. Thus, the attitudes of the participants were partly in line with the statement that a web-quest is simple in application (Wang and Hannafin, 2009). However, research revealed that 1 out of 3 students would not prefer to use a web-quest in a further practice. A slow internet connection and lack of computers caused difficulties in adopting the software in the class. An inadequate internet connection with the lapse of time decreased students` work productivity and students motivation. This argument fairly supported the assertion that insufficient logistics could restrict teaching and learning efficiency (Pachler and Williams, 1999). At the same time, 2 out of 3 students felt inconvenient to view the approached materials while working together on one computer. Though, from teacher`s responses there was revealed that a web-quest greatly facilitated a collaborative work afford and dialogue among students. Interestingly, 2 out 3 students pointed that the reason for enjoying using a web-quest was opportunity to have a discussion and fulfill assignments together which they usually have to do on their own. These findings in part was coincided with Dodge`s view that a web-quest software supports learners` interaction (Dodge, 2007). All the students asserted that they liked the design (colours of the wall, attached pictures and video) of the web-quest. Whereas 1 out of three students emphasized that one of the things he liked in a web-quest was just the fact of working on computer and approaching internet. In addition, the study disclosed that the participants differently perceived a web-quest utilization. Thus, the teacher stated that the assignments within a web-quest were very feasible. In contrast with this argument, which shares Lipscomb`s view that the tasks provided in the web-quest are accomplishable (Lipscomb, 2003), 2 out of 3 students found a web-quest assignments to be quite difficult. There was revealed that the web-quest greatly promotes a problem-based learning and that it was found as a useful tool for further implication in the classes. Hallat`s (2008) assumption that the learners could be distracted by irrelevant web sites and would not want to return to the web-quest was not noticeable in the teacher and students responses.

To sum up, although, a web-quest fairly assisted to meet the aims of the classes. It was conceived as a quite helpful and easily applicable software in the class by all respondents. According to teachers perception, a web-quest supported a problem-based learning, learning environment, encourages critical thinking skills, creativity and group work as well as discussions of the learners. While the learners conceived web-quest as an efficient instrument of attaining knowledge. The teacher stated that a web-quest had an inspiring impact on students. But this inspiration mostly was caused by external appearance of the web-quest than by its contents. The majority of the students found a web-quest interesting and enjoyed it for attractive design, for facilitating group

accomplishment of the assignments and dialogue. While working on computer and internet were identified as one the aspects of the web-quest the minority of the learners enjoyed. There was revealed a division of the respondents` opinions on the practice of software adoption. Even though, a teacher stated that the tasks within the web-quest were manageable, the students conceived them to be challenging to fulfill. Above stated findings acknowledges the argument that an ICT tool on its own could not contribute to effective teaching and learning. The teacher is the one, who should turn a software into a teaching and learning tool (King, 2003). Thus, in this case the teacher should have paid more attention on the contents of the materials, assignments and take in account students` capacities while designing the tasks. Lastly, an adequate implication of a web-quest was limited by lack of the computers linked to internet and slow internet connection. Though, distracting influence of the internet sites on learners was not pointed out.

The adopted research strategy achieved to outline and describe the use of the web-quest in the class and provide quantitative data on this issue. The quantitative approach proved to be suited for the study concerning technology utilization in school (Picciano, 2004, p.53). However, the research had particular shortcomings. Reliance on a single approach and potential limitation of the questionnaire to direct the respondents forward the "line of researcher`s idea" through fixed and mostly closed questions as well as pre-prepared answers(Denscombe, 2004, p. 160), could have led to biased results. An interview would compensate the quantitative approach and information triangulation within different methods could have provided more precise view of web-quest adoption in the class. This would strengthen the validity and reliability of the study as well as increase generalizability of the results.

On balance, the study was valuable as long as it considers a web-quest implication in secondary school in Kazakhstan. Because, there is no prior empirical research on this issue in Kazakhstan context, the research supplied a foundation and presented essential suggestions for further investigations in this field.

Conclusion

The quantitative research facilitated a good conception of the way a web-quest implication is perceived in secondary school in Kazakhstan. The study has suggested that a web-quest was a quite efficient teaching and learning tool.

Although, a web-quest fairly contributed to achievement of the lessons` goals, it was perceived to be a quite useful for facilitating knowledge attainment and supporting a problem-based learning, group work as well as interaction of the students. The teacher stated that a web-quest assisted to create a learning environment, fostered critical thinking skills, creativity and had a motivational effect on learners. However, this encouraging impact mainly was caused by external appearance of the web-quest and its concern to computer and internet than by the contents of the materials and assignments within the tool. Though, all the respondents did not have a prior experience of teaching and learning with any kind of ICT tools and particularly with a web-quest, they have not met any obstacles approaching and using a web-quest in the class. But a lack of computers connected to internet and inadequate internet connection decreased students` inspiration. While a distracting impact of the internet was not defined

as the case. Interestingly, there was explored that the students liked the web-quest for enabling to have a discussion in the class and sharing responsibility for assignment fulfillment. However, some of them felt uncomfortable working collaboratively on one computer and would not prefer to employ it in further classes. While the majority of the participants would like to use a web-quest in the future practices.

The study results proposed that for the successful adoption of the web-quest in teaching and learning practices, more emphasizes should be put on teachers afford. The teachers should be aware of the potential of the software to address the class` set goals. The focus should be made on the contents of the resources and assignments to make them more encouraging. In addition, the students capacities should be taken into consideration in a web-quest design Finally, the adequate logistics and internet connection are one of the main indicators of a web-quest effective implication in the class. The conducted research provides only a limited view and does not make a generalization to a whole population possible. Future study on a larger scale would involve more students from a few classes and teachers of different subjects. The research would regard not only the participants perceptions on the experience of software adoption but it would deal with an observation of these practices. This would disclose other aspects of a web-quest implication in the class.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References

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

Altstaedte, L.L. and Jones, B. (2009). Motivating Students' Foreign Language and Culture Acquisition. Paris: Taylor.

Brucklacher,B and Gimbert,B.(1999).Role-playing software and webquests-what's possible with cooperative learning and computers. *Computers in the Schools, 15(2),* 37-48.

Chalmers,D and Fuller,R. (1996). Teaching and learning at University : theory and practice. London: Kogan Page.

Davis, N., Desforges, C., Jessel,J., Somekh B.,Taylor,C and Vaughan,G.(1997). Can quality in learning be enhanced through the use of IT?, in Somekh,B and Davis,N.(ed).Using information technology effectively in teaching and learning : studies in pre-service and in-service teacher education. London: New York: Routledge.

Denscombe, M. (2004). The good research guide for small-scale research projects. London: Open University press.

Dodge, B. (1997). Some thoughts about WebQuests. Retrieved March 3, 2010, from http://webquest.sdsu.edu/about_webquests.html

Dodge, B. (1998). WebQuests: A strategy for scaffolding higher level learning. Retrieved March 3, 2010, from http://webquest.sdsu.edu/necc98.htm

Dodge, B. (2007). WebQuest.org welcome! Retrieved March 15, 2010, from http://webquest.org/index.php

Dornvey,,Z. (2003). Questionnaires in second language research: construction, administration, and processing. Mahwah, N.J.; London: Lawrence Erlbaum Associates.

Fairbrother, G. (2007). Quantitative and Qualitative Approaches to Comparative Education. In Bray,M., Adamson,B. and Mason,M. Comparative education research [electronic resource] : approaches and methods. Hong Kong, China : Comparative Education Research Centre, The University of Hong Kong: Springer.

Gorard, S and Taylor,C. (2004) Combining Methods in educational and social research. Maidenhead: Open University Press.

Gray, D. E. (2009, 2nd ed). Doing research in the real world. London: Sage.

Halat, E. (2008). A Good Teaching Technique: WebQuests. *Clearing House, 81(3),* 109-112.

Hoover, A.W. (1996). The Practice Implications of Constructivism. SEDL Letter, Volume IX, Number 3. (on-line). (URL http://www.sedl.org/pubs/sedletter/v09n03/practice.html). (Accessed 17 April 2010).

International educator (2010). Do Closed-Search WebQuests Help or Hinder Student Learning?

Ismagulova, S.K. (2009). School education development in Kazakhstan (in Russian). Pedagogical computer science vol.4.pp.37-43. (URL http://pedinform.ru/ARHIV/2008_4.pdf#page=37). (accessed 24 April 2010).

King, K. P. (2003). The WebQuest as a means of enhancing computer efficacy. Washington, DC:Educational Resources Information Center (ERIC Document Reproduction Service No. ED474439).

Kurmanalina, Sh.Kh. (2007).Informatization of education in Kazakhstan (in Russian).(on-line).

Lipscomb, G.(2003., Jan. - Feb). "I Guess It Was Pretty Fun": Using WebQuests in the Middle School Classroom. *The Clearing House, 76(3),* 152-155.

Muijs,D (2004). Doing quantitative research in education with SPSS. London; Thousand Oaks: SAGE.

Murphy,E.(1997).Characteristics of constructivist learning and teaching. (URL http://www.ucs.mun.ca/~emurphy/stemnet/cle3.html). (accessed 12 April 2010).

Oliver,P.(2003). The student's guide to research ethics. Maidenhead: Open University Press.

Opie,C. (2004). Doing educational research : a guide to first-time researchers. London: SAGE.

Pachler,N. and Williams,L. (1999). Using internet as a teaching and learning tool, in (ed.) Leask,M. and Pachler, N. (ed). Learning to teach using ICT in the secondary school, London: Routledge.

Picciano, A.G. (2004). Educational research primer. New York; London: Continuum.

Pole,C., Lampard.R. (2002).Practical social investigation: qualitative and quantitative methods in social research. Harlow: Prentice Hall.

Polly, D and Ausband, L. (2009). Developing Higher-Order Thinking Skills through Web Quests. *Journal of Computing in Teacher Education, 26(1),* 29-34.

Practical research for education (2006). Tool-kit 3: are you asking the right questions? *Practical research for education, 36,* 5-12.

Pritchard, A.(2007). Effective teaching with Internet technologies : pedagogy and practice. London: Paul Chapman.

Pritchard, A.(2009, 2nd ed). Ways of learning : learning theories and learning styles in the classroom. Abingdon, Oxon ; New York, NY: Routledge.

Saduakasova, Zh.(2008). Achievements in the field of informatization of education (the past, present, future) (in Russian). Digital Kazakhstan, 15 January. (on-line). (URL http://www.profit.kz/articles/000391/). (accessed 23 April 2010).

Selinger,M. (1999). ICT and classroom management, in Leask,M. and Pachler, N. (ed).Learning to teach using ICT in the secondary school, London: Routledge.

Sutherland,S., Robertson,S. and John,P. (2009). Improving classroom learning with ICT. Milton Park, Abingdon, Oxon ; New York, NY: Routledge.

Brett Jones Through Web-Based Inquiry. *Foreign Language annals, 42(4),* 640-657.

Vidoni, K.L. and Maddux, C.D. (2002). WebQuests: Can they be used to improve critical thinking skills in students? *Computers in the Schools, 19(1–2),* 101–117.

Wang,F and Hannafin, M.J.(2009) Scaffolding preservice teachers' WebQuest design:a qualitative study. *Journal of Computing in Higher Education, 21,* 218-234.