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Exploring the Use of WebQuests in the Learning of Social Studies Content

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Abstract

WebQuest is an approach which uses the Internet as an integral part of teaching any subject at any grade level. Developed by Bernie Dodge at San Diego State University in 1995, it has generated lots of interest. There are now numerous examples of WebQuests available on the World Wide Web. WebQuest has the potential in bringing about more critical thinking and student engagement. This article will (1) explain what WebQuest is all about and explore examples in primary social studies to show its applicability in achieving important instructional goals in social studies teaching and learning, (2) demonstrate how WebQuests were used in a pre-service course for primary social studies teachers at the National Institute of Education, Singapore; and (3) share the responses of pre-service teachers towards the use of WebQuests in learning primary social studies content.

Introduction

We are living in an information technology (IT) age. In The Sunday Times' (2000) Review Section on 27 February, Geoffrey Pereira entitled his column headline as "Love IT or hate IT but learn to use it" — a timely advice to all Singaporeans. As teachers, we cannot remain technophobes. We have to keep abreast of technology in order to remain relevant as well as to succeed in preparing our pupils for the digital future. The Singapore Ministry of Education has spent much money providing schools with the IT infrastructure and training teachers to use IT in their lessons. In fact, Singapore schools have one of the highest ratios of computers to pupils/teacher compared with schools in other countries. Our pupils have become more competent in IT and people have begun to refer to today's children as the Generation Dot.Com. Hence, whether we like it or not, as teachers, we have to learn how to use IT, particularly the Internet and to integrate it into our lessons on a regular basis.

As Singapore moves into a knowledge-based economy, there is an increasing need to equip our pupils with the necessary skills to function in a world where knowledge is increasing at an exponential rate. Pupils need to be able to tap on the

information out there in cyberspace and be able to make sense of that information to make it work for them. Much of the current literature on learning on the World Wide Web highlights the flexibility of the web in providing information and enabling students to perform self-guided exploratory learning (Scott, 1996; Kahn, 1998). This constructivist perception of learning implies that each learner constructs his/her knowledge uniquely, based on the information received and regulated or guided through scaffolds.

As teachers, we are concerned about how we can use the World Wide Web as a motivating force in the classroom and help our pupils go beyond learning facts and become self-directed learners. How do we send our pupils out onto the information highway and ensure that they do not get lost in the World Wide Web and use the Internet in a responsible manner? One great way to address these concerns is to use WebQuest, an approach to using the Internet as an integral part of teaching any subject at any grade level, while allowing different degrees of scaffold or guidance.

What is a WebQuest?

WebQuest was first developed by Bernie Dodge in 1995 at San Diego State University and has since then become increasingly popular. WebQuest is built around an authentic task, one that is engaging and elicits higher-order thinking. It requires learners to do more than simply acquire information or answer simple questions. They have to *do* something with the acquired information. Learners have to process, apply and present information from the Internet or other ancillary sources. The thinking can be creative or critical. It can involve problem-solving, judgement, analysis or synthesis. They may work in collaborative groups, and each member takes on a specific role or job in carrying out the task which can be completed within the time provided. Thus, a WebQuest can be defined as:

> *"...an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet, optionally supplemented with video-conferencing"* (Dodge, 1997).

WebQuest can be short term or long term. A short-term WebQuest is designed to be completed in one to three class periods where the instructional goal often is knowledge acquisition and integration. Learners will have to grapple with a significant amount of new information and make sense of it. In a long-term WebQuest, usually of about several weeks in duration, learners are challenged to extend and refine the knowledge they find online and in the real world. They are required to analyse the information, transform it in some way, and demonstrate an understanding by applying that information or creating something that others can respond to, online or offline.

Critical Attributes of a WebQuest

WebQuest has the following critical attributes:

1. An *introduction* that sets the stage and provides some background information.
2. A *task* that is authentic, interesting and can be completed within the time provided.
3. A description of the *process* the learners should go through in accomplishing the task. The process is usually broken into clearly described steps. It would include some *guidance* on how to organise the information acquired. This can take the form of guiding questions, or directions to complete organisational frameworks such as timelines, concept maps or cause-and-effect diagrams.
4. A set of *information sources* that is 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 in the learner's setting. Because pointers to resources are included, the learner is not left to wander through web space completely adrift.
5. An *evaluation* that tells learners how they would be graded for their task.
6. A *conclusion* that brings closure to WebQuest, reminds the learners about what they have learnt, and perhaps encourages them to extend the experience into other domains.

Why WebQuests?

March (1998, 2003) has suggested that WebQuest has the potential to motivate and enhance learning. WebQuest uses several strategies to increase learner motivation. First, the task is an authentic one and relates to real-world problems and issues and ideally, is a scaled-down version of something that adults would do in the real world. Second, learners are given real resources to work with. With the Web links on the WebQuest page, learners can directly access individual experts, searchable databases and current reporting. They need not rely on dated textbooks and filtered encyclopedias. Third, the solution the learners develop can be posted, emailed or presented to real people for feedback and evaluation. The authenticity of the task and the assessment mode will motivate learners to do their best to understand the issues involved in the problem and develop a response that is meaningful to the problem at hand.

The attraction of a well-designed WebQuest lies in the fact that it goes beyond simple information retrieval. An important feature is that learners tackle questions that prompt higher-level thinking. Hence, learners cannot respond to the task simply by collecting and regurgitating information. WebQuest forces learners

to transform the information they have examined into something else: a solution to a problem under investigation; a synthesis of ideas related to a topic, etc. New information is assimilated and used to modify their understanding in the light of this new information. Through this process of assimilation, ideas become more complex and with appropriate support, learners develop critical insight as their understanding increases in depth and detail, in line with Strommen's (1992) idea published a few years before WebQuest was even introduced on the web. This is most useful in social studies where inquiry and discussion of social issues are germane to the discipline. WebQuest is a powerful tool for teachers who want to motivate learners to think more critically and creatively and move beyond simple acquisition of information. The teacher becomes a facilitator or the "midwife in the birth of understanding", rather than a knowledge provider or the "mechanics of knowledge transfer" (von Glasersfeld, 1995).

WebQuest uses a constructivist approach, an important concept of which is that of scaffolding — a process of guiding the learner from what is presently known to what is to be known (Chang, 2004). According to Vygotsky (1978), learners' problem-solving skills fall into three categories: skills which the learners cannot perform, skills which they may be able to perform and skills that they can perform with help. Scaffolding allows learners to perform tasks that would normally be slightly beyond their ability without that assistance and guidance from the teacher. Appropriate teacher support can allow learners to function at the cutting edge of their individual development. This learning scaffold is built into the WebQuest design, which allows for different degrees of scaffolding or guidance to be incorporated as deemed fit by the teacher.

Additionally, non-critical elements built into most WebQuests, such as role-playing and working in co-operative learning groups, promote motivation and enhance social skills. Many WebQuests are designed around large, complex or controversial topics. It is thus not realistic to expect each learner to master all aspects of the topics. The reality is that not everyone knows everything and experts work on only a small portion of the knowledge pie. Hence, cooperative learning elements such as positive interdependence and individual accountability (Johnson & Johnson, 1989) are built into WebQuest tasks. This allows the learners to develop expertise in their areas of responsibility and to be appreciated by their peers for their contributions. Learners then become increasingly aware that their individual work has a direct impact on the quality of the group's final product. These are values promoted in social studies as well, hence the relevance of using WebQuest as a teaching tool in the learning of social studies content.

Encouraging the Use of WebQuests in Teacher Preparation Courses

WebQuest provides access to an abundance of resources, most of which is online and scaffolds the learning process to prompt higher-order thinking

(Chang & Williams, 2003). It brings together the most effective instructional practices into one integrated pupil activity. In the Humanities and Social Studies Education Academic Group (HSSE) of the National Institute of Education, Singapore, WebQuests have been widely promoted by faculty members responsible for methods courses in the teacher preparation programmes as an effective pedagogical tool. As part of portfolio assessment, our trainee teachers have developed examples of WebQuests based on the Ministry of Education Social Studies Syllabus for primary schools. These WebQuests can be accessed at the homepage of the academic group at http://www.hsse.nie.edu.sg/. Some examples include the following:

- *A Land of Many Sons*
  Level: Primary Three
  The purpose of this WebQuest is to get pupils to plan a programme sheet and to design a poster on one of the cultural heritage sites in Singapore — Little India, Chinatown or Kampong Glam.
- *What Makes a War Hero*
  Level: Primary Four
  This WebQuest requires pupils to research on the concept of a war hero, identifies the characteristics of a war hero by studying Lim Bo Seng, Adnan Saidi and Elizabeth Choy and to evaluate whether the three characters deserve the honour. Pupils have to present their findings in the form of a report.
- *Total Defence*
  Level: Primary Five
  This WebQuest requires pupils to design a club logo and five mission statements that are related to the Total Defence of Singapore.
- *Transport*
  Level: Primary Six
  The purpose of this WebQuest is to design a webpage to trace the development of the various modes of transport in Singapore over time.

An important approach in the social studies teacher preparation programmes at the National Institute of Education is the use of experiential learning. It is our firm belief that trainee teachers should be given opportunities to experience teaching methods which are alternatives to traditional "teacher talk" in the learning of social studies content. These alternative teaching methods include fieldwork, cooperative learning, IT tools and strategies such as WebQuests and others. Such active engagement in the form of experiential learning will bring about greater understanding of the underlying principles and practice of these alternative methods. However, the extent of experiential learning is limited if these methods are taught and experienced only in "methods" courses. At the National Institute of Education, all trainee teachers are also required to undertake content modules in geography and history as part of the development of their content competence as social studies teachers. The structure of their programme

provides a unique opportunity for faculty members to employ alternative methods in teaching social studies content to trainee teachers. They can learn social studies content in an environment which differs from the traditional lecture-tutorial method.

Three WebQuests were used in a course "Selected Geography Topics for Primary Social Studies" with 54 trainee teachers divided into two tutorial groups. They were used in the learning of three topics, water, energy and housing under the overall theme of "The Needs of Singapore" (please refer to http://www.hsse.nie.edu.sg/webquest/sscc.htm). The use of these WebQuests organised around cooperative learning groups helped to solve the problem of content coverage within the constraints of limited curriculum time. This is a perennial problem for all teachers both in schools and teacher education institutions as there is always too much to teach and too little time to teach it. There is also the need to balance depth and breadth in the learning of a topic in a course. Different groups of trainee teachers were simultaneously assigned WebQuests on different topics and each group could share their findings with the rest of the class during the tutorial after 2 weeks. This was an efficient way to cover three different topics simultaneously within the prescribed curriculum time. At the end of the sharing session, all the trainee teachers would have learned something about the three topics.

The WebQuests were designed to allow trainee teachers to construct their own knowledge and understanding of the content as they interacted with their peers. The trainee teachers took on an active rather than a passive role in making sense of their learning. They had to make sense of the online resources provided and transform that understanding in their presentation of group and individual reports. An effort was made to ensure that the trainee teachers did not adopt a "cut and paste" approach to the online materials provided. Faculty members became facilitators in the learning process rather than knowledge givers.

The WebQuest on Water required the trainee teachers to look at the water problem facing Singapore and the world. The trainee teachers had to work in teams with different roles assigned to each member. These were the energizer, resource manager, editor and technical producer. The learning objectives were to:

- explain why there is a water problem in Singapore;
- evaluate the extent of the water problem in Singapore and the world;
- suggest some solutions to the water problem;
- evaluate the attractiveness of the alternative sources of water.

The WebQuest on Energy required the trainee teachers to look at the energy issue in Singapore and decide on the best alternative energy source for the country. The trainee teachers again had to work in teams and were given roles of leader, recorder, designer, editor and resource manager-cum-time keeper. They had to use the cooperative learning strategy, Within-Group Jigsaw, and the decision matrix

provided to help them choose the best alternative energy source. The learning objectives were to:

- describe the main types of energy sources used in Singapore;
- describe how they are harnessed;
- suggest different ways to conserve energy;
- evaluate the pros and cons of alternative energy sources;
- decide on the best alternative energy source for Singapore.

The WebQuest on Housing required the trainee teachers to take on various roles, namely the historian, town planner, demographer and architect to examine the housing issue in Singapore particularly, the development of public housing, the characteristics and design of new towns and whether public housing has met the needs of the people. The learning objectives were to:

- trace the development of public housing in Singapore;
- describe the characteristics and design of new towns;
- evaluate whether public housing has met the needs of Singaporeans such as the aged and the disabled.

In all the three WebQuests, online resources were provided and the trainee teachers were encouraged to look for other relevant websites using search engines such as *Google*. They were all evaluated on the process and the product of the learning task. Process evaluation in the form of peer evaluation focused on how well the team worked together to carry out the task. Each team member had to evaluate his teammates using an evaluation rubric and the specified criteria were contribution, cooperation, taking responsibility, valuing others' viewpoints and attitude. The products of the learning task were evaluated in two formats, a group product which was a PowerPoint presentation to the tutorial group and an individual report. The evaluation criteria for the oral presentation comprised clarity, accuracy, relevance, organisation, coverage, thinking, delivery, response to questions and use of illustrations and visual aids. The evaluation criteria for the individual report focused on accuracy, relevance, organisation, thinking, evidence and use of references.

The WebQuests were carried out over a 3-week period. The trainee teachers were given 2 weeks to complete their tasks and in the third week, they presented their work. They were given about 10 minutes to present and 5 minutes to answer any questions from the class.

Trainee Teachers' Responses to the Use of WebQuests

Trainee teachers' responses towards the use of WebQuest in learning social studies content were obtained by asking them three questions: what they liked most; what they disliked most and suggestions on how to improve the WebQuest activity. Their written feedback was collected and collated.

Generally, the trainee teachers liked the tasks in the WebQuests. They could search for new information at their own pace. There was individual accountability as each member was given a role and a part of the overall task. There was opportunity to discuss work together, design their PowerPoint slides and do the presentations. They learned a great deal from each other and through it, to value other people's perspectives on the topic. The trainee teachers liked the resources as many useful and informative links were provided. They were motivated to read beyond the resources provided in the WebQuests. They learned a good deal of the factual materials and developed new and deeper insight of the content. They also developed their communication and thinking skills. Many preferred learning social studies content using WebQuests to the lecture-based approach. It was a different way of learning content and it was both fun and challenging. Learning was self-directed in nature and the experience was enriching to them. They mentioned that they would use WebQuests for their own teaching in future and would recommend WebQuests to their fellow trainee teachers.

However, some trainee teachers did not like the use of WebQuests. It was perceived that the instructions for the various tasks were unclear. Some disliked the amount of time spent in getting to the various websites provided whilst others had difficulty putting the information together. Some did not enjoy developing the PowerPoint slide presentations and working on their individual reports. Some mentioned that there was a lot of information to read for the WebQuest on water and not enough links were provided for WebQuests on energy and housing. Generally, the main complaint was the inordinate amount of time spent in completing the WebQuest tasks. Some felt that insufficient time was provided to complete the tasks. There were practical problems like finding time to meet to discuss group presentation as team members had conflicting class schedules. They were unhappy that they had to use the 1-week semestral break to complete the tasks. Others found it difficult to evaluate their peers despite being given the evaluation rubric.

Concluding Remarks

On the whole, the trainee teachers' experience with WebQuests had been an enjoyable and enriching one. From the qualitative feedback, there were gains in their knowledge and understanding of the topics in the course. There was a perceived increase in their motivation to learn social studies content, greater self-confidence, skills and an improvement in the way the trainee teachers worked in their cooperative learning teams. At the same time, there were issues like inadequate time and relevance of the online resources provided.

The teaching faculty found their experiment with the use of WebQuests generally successful. They were satisfied with the learning outcomes such as the good quality work produced by the trainee teachers. The feedback from trainee teachers have provided inputs to ways of improving the three WebQuests specially designed for the experiment. Online resources provided will be checked to

ensure relevance. Alternative ways of group presentations can be explored. The issue of time to complete the tasks needs to be addressed in subsequent use of WebQuests in future courses. March (1998) comments that the "most successful WebQuest has little to do with bandwidth or the excellence of the websites we link to". Improvements to the design of the three WebQuests will work towards the effectiveness of WebQuests as an instructional tool in the learning of social studies content. At the same time, practical implementation issues have to be looked into. The ultimate test of how worthwhile this experiment has been for us as teacher educators is the knowledge that some of our teacher trainees left the course with a desire to want to use WebQuests with their own pupils in the social studies classrooms which they will be assigned to teach in future. They had learned about using WebQuest by using it in their own learning of social studies content.

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