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WebQuests in the Middle School Curriculum: Promoting Technological Literacy in the Classroom

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"...technological literacy must include a wide range of opportunities for students to interact with a variety of tools and resources in order to develop a level of competence that will allow them to use technology effectively and productively in the workplace."

Introduction

On January 27, 1998, the president's State of the Union Address (Clinton, 1998) included a ten point plan calling for, among other things, to "connect every classroom and library to the Internet by the year 2000 and help students become technologically literate." The president's focus on the use of technology in the classroom setting and promoting technological literacy among our students echoes the concern of many educators. Raizen, Sellwood, Todd, and Vickers (1995) suggest that technological literacy must include a wide range of opportunities for students to interact with a variety of tools and resources in order to develop a level of competence that will allow them to use technology effectively and productively in the workplace.

Over the course of the last 20 years, educators have been inundated with new programs and methods aimed at integrating new technologies with classroom curriculum. Many discussions have centered around attempts to determine the most effective uses of technology in the classroom. From these discussions additional questions continue to be generated. How can we harness this technology for educative purposes? How can this technology enhance middle school education? What are the most effective approaches to integrating technology with curriculum so that it provides the greatest benefit for students?

"Any program designed to meet the challenge issued by the president must take into consideration the needs and concerns of classroom teachers as well as the needs and concerns of students."

Resistance to Change

"Teachers are among the most 'conservative' professionals. While they are extremely creative in their classrooms, and tremendous risk takers in the way they work with students, they remain staunchly conservative and protective of their subject matter. Changes in instruction that threaten a teacher's ability to present the great bulk of material they feel they must cover will be met with resistance." (Zaraza and Fisher, 1995, p. 3)

This perceived resistance to change among teachers may lie in the fundamental alteration of the classroom dynamic from curriculum-centered instruction to student-centered instruction (Sandholtz, Rigstaff, and Dwyer, 1997). However, this perception just as easily may be explained by the tremendous pressures being placed upon teachers to meet academic standards while an increasingly violent society threatens the safety and stability of the classroom environment. As they work diligently to meet the needs of their students, teachers who themselves are less than comfortable with technology may view the new insistence on including technology in their classrooms as a burden.

While the availability of computers in the classroom provides new opportunities for creative teaching, it also imposes new challenges.   Any program designed to meet the challenge issued by the president must take into consideration the needs and concerns of classroom teachers as well as the needs and concerns of students.

WebQuests -- Meeting the Challenge

"The more meaningful, the more deeply or elaboratively processed, the more situated in content, and the more rooted in cultural, background, metacognitive, and personal knowledge an event is, the more readily it is understood, learned, and remembered." (Iran-Nejad, McKeachie, and Berliner, 1990, p. 511)

"According to Dodge (1997), a WebQuest is an inquiry-oriented activity in which students interact with information gleaned primarily from resources on the Internet . . ."

The WebQuest Page

About WebQuests

Bernie Dodge

As more schools are using computers to connect to the Internet, a wealth of ideas are being generated by great teachers on how best to integrate this particular technology into the classroom environment. Bernie Dodge of San Diego State University is one of these great teachers. His work with WebQuests is one of the most creative efforts aimed at reforming instructional practice. According to Dodge (1997), a WebQuest is an inquiry-oriented activity in which students interact with information gleaned primarily from resources on the Internet.

WebQuests may be labeled inquiry-centered or problem-centered learning by some, while others may view them simply as activities that provide students the freedom to learn by accessing multiple resources. However they are characterized, WebQuests are reflective, fluid, and dynamic. They provide teachers with the opportunity to integrate Internet technology into the course curriculum by allowing students to experience learning as they construct their perceptions, beliefs, and values out of their experiences (Beane, 1997).

WebQuests can be especially useful for teachers who are novices in the area of technology in that they offer prepackaged, self-contained lessons ready for implementation. The WebQuest site contains lessons, rubrics, and teaching tips. In this way, WebQuests allow the teacher to make an easier transition into using Internet technology with minimal stress.
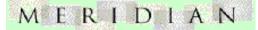
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WebQuests in the Middle School

"...it is easy to see why teachers who experiment with WebQuests often have creative and energetic classroom environments that promote the seeking out of new knowledge."

Strategies for Implementing WebQuests

A WebQuest activity presents students with access to a plethora of resources that have been pre-screened by the WebQuest's creator. The way the activity is designed discourages students from simply surfing the Web in an open-ended, unstructured manner. The design is presented in six parts called building blocks. The introduction, tasks, process, resources, evaluation, and conclusion are the building blocks that comprise this tightly formatted Internet lesson. Within this format, there is little chance that students will fall prey to distractions or exposure to inappropriate Web sites.

The interdisciplinary learning requires students to consider and apply concepts in various subjects to their everyday lives. When this happens they experience even greater motivation to participate in the activity. Couple this increased student motivation with the stimulation and enthusiasm that technology brings to the classroom, and it is easy to see why teachers who experiment with WebQuests often have creative and energetic classroom environments that promote the seeking out of new knowledge.

This kind of interdisciplinary teaching and learning more closely parallels students' daily experiences (Raizen et al., 1995). Consequently, the WebQuest activity is a useful tool for enhancing the development of transferable skills and helping students to bridge the gap between school and "real world" experiences.

Building Blocks of WebQuests

The WebQuest Design Process

WebQuests were designed with the purpose of instilling in students the capacity to navigate the Internet with a clear task in mind, retrieve data from multiple resources, and increase critical thinking skills (Dodge, 1998). Dodge's primary goal in designing WebQuests was to make the most efficient use of instructional time. Additional beneficial attributes of WebQuests include providing students with the opportunity to engage in cooperative learning, encouraging the development of intrinsic motivation for learning, and promoting a constructivist learning environment.

The hands-on, active-learning setting equips students with additional useful skills. Most WebQuests require students to perform multiple tasks, well beyond simply presenting their findings to the class or writing a report. These possible tasks include the creation of a hyperstudio project, videoconferencing, and using email, databases, and spreadsheets, as well as a myriad of other technology-rich possibilities.

As is the case with any other lesson, a WebQuest activity requires advance teacher preparation that includes planning, preparing students for the lesson, and guidance through the activity itself. "

WebQuest examples

WebQuest collections

WebQuest 1

WebQuest 2

Other online resources

Organizing resources

O'Farrell Web pages

Lesson Templates for **Students** and **Teachers**

The two basic types of WebQuests are the short-term WebQuest and the long-term WebQuest. Each type of WebQuest produces different educational benefits. The short-term WebQuest is intended to span a minimum of one 45-minute class period to a maximum of three 45-minute class periods. The short-term WebQuest allows the learner to grasp a significant amount of data in a relatively short amount of time while retrieving the primary points and generalizations. On the other hand, the long-term WebQuest may extend over several weeks to a month. This allows for a more in-depth analysis of concepts and encourages students to develop a deeper appreciation for the subject matter being investigated.

As is the case with any other lesson, a WebQuest activity requires advance teacher preparation that includes planning, preparing students for the lesson, and guidance through the activity itself. Additionally, teachers may elect to create their own WebQuest. This can be a very straightforward task since Dodge's Web page provides helpful resources including instructions on how to create a WebQuest, examples of WebQuests, and a template which is downloadable and user-friendly, even for a novice. Teachers who choose to use one of the WebQuest examples from the site can easily determine its appropriate usage. Since examples are categorized according to subject and content, teachers merely have to make the choice of which one is most appropriate to use in their classroom.

Evaluating WebQuests

WebQuests have been identified as quests for knowledge. Rather than being a static body of content to be taught, a WebQuest is an evolving body of content to know, to explore, and to process. This happens because the body of content changes as students interact with the information. WebQuests allow students to gain access to multiple sources of information. Therefore, an important question becomes, how do I judge the quality of resources used in a WebQuest?

The WebQuest site at San Diego State University provides several methods of evaluation. One issue to be addressed is whether or not WebQuests meet the needs of the class curriculum. A second issue for consideration is whether or not they are easy for students to use. This interface issue is an important one because many things can go wrong with an activity of this type if adequate planning and preparation have not occurred. As students learn to use WebQuests, constant communication among students within learning groups and between students and teachers is vital.

The model used to evaluate WebQuest assignments suggests that student input is of utmost importance. Students should have input in the creation of rubrics and should be provided with foreknowledge of the requirements. Having spent time immersed in conversations on the topic of evaluation, I believe that evaluation of students' progress with a model must involve both oral and written feedback. This is necessary in order for the students to understand the directions and outcomes expected of the assignment and to further their level of participation and accountability. This form of interaction between students and teachers is especially

important when using WebQuests.

New Directions for Inquiry-Centered Learning

WebQuests provide a practical way for students to acquire information, debate issues, participate in meaningful discussions, engage in role play simulations, solve problems, and, perhaps most importantly, become connected and involved learners. The use of this instructional technique affords students the opportunity to make connections and to discover for themselves that a meaningful education is one which teaches us to use what we have learned by applying our learning to new experiences.

While the use of WebQuests in the middle school curriculum presents an opportunity for classroom teachers to take a fresh approach toward meeting the demands of the curriculum, it is important to remember that their use constitutes one tool among many to be used in the classroom. What else can we do in our classrooms that would allow us to take advantage of the Internet as an educational resource? Through interaction and collaboration, the individual answers teachers formulate to this question can be combined to pave the way for an ever-expanding range of educational possibilities for our students.

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"Rather than being a static body of content to be taught, a WebQuest is an evolving body of content to know, to explore, and to process. "

Rubric for Evaluating WebQuests

Rubrics for Evaluating Student Performance

"The use of this instructional technique affords students the opportunity to make connections and to discover for themselves that a meaningful education is one which teaches us to use what we have learned

by applying our learning to new experiences."

About the Author

Kenneth Lee Watson is a former high school advanced placement political science teacher and current doctoral candidate in Social Studies Education at the University of Virginia's Curry School of Education. His research interests include technology applications in Social Studies Education with a particular interest in Web-based curricula.