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In-Service and Pre-service English Language Teachers’ Perceptions of WebQuests

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Abstract

The WebQuest is a relatively recent discovery type learning activity that requires students to interact with internet resources in order to achieve specified objectives in a learning task. Although introduced more than a decade ago, WebQuests have not yet had an impact in the Malaysian education scenario. This paper examines the perceptions of 52 in-service and pre-service teachers towards WebQuests after they had undergone a familiarization session to the activity which includes exposure to examples of WebQuests. The study elicits these teachers’ views on the theoretical foundations and the practicality of WebQuests as well as the extent of teacher training required in order to conduct a WebQuest activity. The perceptions of the in-service and pre-service teachers are also compared in order to examine how receptive one group is towards WebQuests as compared to the other.

Introduction

Dodge (1995) defined the WebQuest as an “inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet.” He characterized the activity as being structured by six critical attributes which are: an introduction to the task; a task that is both interesting and can be performed; information resources that will contribute to the completion of the task; a clear process in performing the task; evaluation that acts as guidance and an organizational framework; as well as a conclusion that encourages user reflection and closure. The popularity of WebQuests has been clearly demonstrated by the number of hits the WebQuest homepage has received. As many as 7.5 million visitors have been recorded at the web site in the 9 years from February 1998 to early February 2006. More importantly, however, the WebQuest activities are seen to have strong theoretical and pedagogical foundations. March (2004) posited that the learning power of WebQuests involves transformative learning that uses links to essential resources of the World Wide Web and an authentic task to motivate students’ investigation of an open-ended question. WebQuests are seen to develop individual expertise as well as participation in a group process that transforms newly acquired knowledge into a more sophisticated and sensible understanding. Hence, the WebQuest is not equivalent to merely surfing the Net and getting the information independently. This type of learning or “learning input” is just a small fraction of the bigger picture with regard to using WebQuests. The way the WebQuest activity is designed discourages students from simply surfing the Net in an open-ended,
unstructured manner. The students’ purpose for navigating the Net in a WebQuest activity is to retrieve data from multiple resources with a clear objective in mind. These activities also help students to increase their critical thinking skills. Dodge (1998) added that WebQuest activities make the use of instructional time efficient and provides students with the opportunity to engage in cooperative learning, encouraging the development of intrinsic motivation for learning, and bridging the gap between school and “real world” experiences.

The WebQuest design is presented in six parts called building blocks referred to as the Introduction, Task, Process, Resources, Evaluation, and Conclusion. These building blocks are tightly formatted Internet lessons that leave little chance for students to get distracted or be exposed to inappropriate websites. A brief description of these six parts are as follows:

1. **Introduction**
   An introduction sets the stage and provides some background information. The orientation provides a scenario that engages learners in the task. It should be imaginative and relevant to the learners’ needs and interests.

2. **Task**
   The task is a description of what the learner needs to accomplish by the end of the WebQuest task. The problem designed has to be one that challenges and elicits learners thinking that goes beyond rote comprehension.

3. **Process or Steps**
   A clear description of the process or steps learners need to go through is outlined when accomplishing the task. This is where learners locate, synthesize and analyze information and collaborate with team members to complete the task. They need to know exactly where they are in each step and what to do next.

4. **Resources**
   Since the WebQuest itself is on-line, the resources involved in a WebQuest activity are generally Web-based. However, these resources could also be available in print or video resources. Nevertheless, the majority of the resources for the completion of WebQuest tasks should be found on the Internet. When resources are on the internet, the teacher can provide a common list of resources that can be used by all learners.

5. **Evaluation**
   Pickett and Dodge (2001) recommend that rubrics be used for the purpose of evaluation. The criteria used in evaluation should be that responses are clear, consistent, and specific to the tasks set.

6. **Conclusion**
   This section of WebQuests provides an opportunity for learners to reflect on what they have learned, and perhaps encourage them to extend the experience into other domains.

Lamb and Teclehaimanot (2005) have underscored the advantages of WebQuests, stressing how the activity integrates the internet into the classroom with evaluation, analysis and transformation of information that propels the activity beyond a mere “hodge-podge collection of facts and opinions” to “a more meaningful and authentic
learning experience” reflective of high-level student thinking. In their retrospective, they discuss how WebQuests are noted to have foundations in “constructivist philosophy; thinking, understanding, and transformational learning; authenticity and situated learning environments; inquiry-based learning; scaffolding; differentiation; cooperative learning; motivation; and motivation, challenge and engaged learning” (pp. 2-7).

The constructivist philosophy advocates that knowledge is constructed, not transmitted. Using WebQuests allows for knowledge construction through students’ participation in activities designed, that is, knowledge is embedded in the activities. The WebQuest activity also encourages critical thinking skills (Marzano, 1992), including: comparing, classifying, inducing, deducing, analyzing errors, constructing support, and analyzing perspectives. Students do not simply regurgitate information found on the Net, instead, they are guided towards a transformation of the information in order to achieve a given task. WebQuests facilitate meaningful use of the Web for educational ends. To increase students’ willingness to expend effort in the pursuit of learning requires tasks which are authentic and relevant. Similarly, a topic that compels students to work and complete the task is also important. The WebQuest, with its building blocks that provides a scaffolded learning structure, inspires students to attempt the task at each level. Differentiating tasks and establishing reliable sources for real-world feedback beyond the classroom increase the likelihood that the student will be more motivated and develop an active understanding of the problem. The building blocks of the WebQuest are uniquely designed to cater for collaborative groups as well as to develop individual expertise.

Typically, each student who participates in a WeQuest takes up a role that helps their team to investigate an issue. This will, in turn, promote inquiry based learning. Stein (1998) affirms that students develop their own expertise in the subject from within a situated learning environment that leads to more effort and greater concentration when attempting the task as they need to reflect on the knowledge gained and how practical it is to be used in real-life situations. Indeed, many educators believe that the WebQuest can help both students and teachers to be “creative and productive, using this powerful medium to spark the imagination, solve problems, and promote discussion about important issues” (Yoder, 1999, pp. 7-9).

Lipscomb (2003) conducted a study by implementing WebQuests in a middle school social studies class. Training was given to familiarize students to WebQuests, which included a discussion of the key elements, resources available, and strategies for using time effectively. The class then completed a WebQuest on the topic of the American Civil War. They completed their journal entries which showed a “tremendous amount of creativity, in both appearance and content” (p. 154). Lipscomb then proceeded to provide several suggestions for implementing WebQuests which include having a backup plan; maximizing class time on the computer; clarifying student roles; and continuing work even after computer time is over (in Strickland, 2005; pp. 141-142).

Weinstein (2000) suggested that in order to foster critical thinking skills among students, teachers must instill and incorporate critical thinking skills into the existing curriculum. It should not be treated in isolation or as an additional subject. Vidoni and Maddux (2002) did a comparison between the WebQuest format and the framework for critical
thinking established by Weinstein and the Institute for Critical Thinking. They found that the WebQuest format meets the six key elements in critical thinking suggested in the framework. These studies confirm that the WebQuest’s structure which focuses on student-centered instruction encourages students to use their time well, to focus on using information rather than looking for it, and to support students’ thinking at the level of analysis, synthesis and evaluation.

While the potential of WebQuests is apparent in all content subjects, it has a distinct application in Language Arts, specifically in the development of reading, writing and communication skills development (Dudeney, 2003). The use of WebQuests in teacher training has also been reported by several writers (Kundu & Bain, 2006; Zheng et al., 2005). Kundu and Bain, for example, describe how the WebQuest has been used in training art education pre-service students who spend about 3 to 4 weeks to collaboratively construct a WebQuest. Similar studies have been done by Pun, Lee, Chan and Yang (2005) as well as Chen, Mahoney, and McIntosh (2005) with trainee teachers. However, despite the advantages that WebQuests can bring to the educational process - in teaching and learning languages as well as other content subject - its implementation in Malaysian schools has not been well documented and remains unclear. The use of computer and ICT technology in Malaysian schools must emphasize a clear strategy of integrating internet resources although the use of technology in education at all levels of education is strongly encouraged. Acceptance of the WebQuest by teachers who are the implementers of such a strategy is critical. Zheng et al. (2005) comment on this aspect by observing that the existing research on WebQuests has focused on design and development with very little emphasis on how the WebQuest is perceived as an instructional and learning tool despite perceptions having and influence on exit behaviour and should become a part of the design process (p. 41). This study, therefore, focuses on the use of WebQuests as a directed form of internet use and how in-service and pre-service teachers perceive of the WebQuest.

The Study

In this study, two groups of university students were asked their opinions about the use of WebQuests in teaching and learning languages. The first group consisted of 26 in-service teachers (average age = 32.8) pursuing a degree course in the Teaching of English as a Second Language in a Malaysian university, while the second group comprised 26 pre-service teacher trainees (average age = 21.4) pursuing the same course. Both groups underwent 3 to 4 hours of familiarisation to the WebQuest which included visiting the San Diego State University WebQuest page at [http://webquest.sdsu.edu/index.html](http://webquest.sdsu.edu/index.html) (see Figure 1 below); and reading Bernie Dodge’s articles “Some thoughts about WebQuests” and “Building blocks for WebQuests” that were accessed through this page. They were also allowed to explore sample WebQuest pages and were especially instructed to visit three WebQuests: Realm of Fairy Tales, Rewriting Romeo and Juliet and Acid Rain in order to understand how different WebQuests work. Finally, the students also participated in a simulation activity involving close examination of WebQuests ([http://webquest.sdsu.edu/materials.htm](http://webquest.sdsu.edu/materials.htm)).
This simulation activity is a WebQuest in itself as participants take up one of four roles and work in groups to review selected WebQuests in humanities constructed for American High School students. Each of the roles emphasises different elements such as time, collaboration, level of thinking, and the use of technology as the most important aspect of a learning activity. The titles of the WebQuests reviewed, together with a short description of each are as follows:

- Experience personified: Analyse and use of poetic devices;
- Gallery of art-i-facts: Design and fill an Art Museum wing;
- Somewhere in the middle: Analyse a controversial issue;
- Guess who’s coming to dinner: Design a dinner party in the 17th century;
- World of Shakespeare: Create a skit based on Shakespeare’s world

The simulation comes to an end when each group of four students agree on the two best and worst WebQuests from this list as well as decide on what best and worst mean to them.

Both groups then responded to a questionnaire which consisted of five sections. The first section consisted of 3 questions that served to elicit information on the respondents’ computer literacy and comfort in using computers. For the purposes of this paper,
however, responses to this section were not analysed. In the second section, 15 positive statements concerning the benefits of the WebQuest activities based on advantages emphasized by educationists (see Lamb and Tecelehaimanot, 2005; Zheng et al., 2005) were presented to the respondents. Respondents were thus asked to state whether they agreed to statements such as the following:

**Section B**
The following statements are about the WebQuest. Circle the number on the scale that corresponds to your reaction as a teacher/teacher trainee to each statement. (SD = Strongly Disagree; D = Disagree; U = Undecided; A = Agree; SA = Strongly Agree)

<table>
<thead>
<tr>
<th>Statement</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. They are meaningful to the students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. They provide an authentic learning experience.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. They allow students to construct meaning.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. They encourage higher order thinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. They encourage students to learn cooperatively with other students.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The third section examined respondents’ perception of the practicality of WebQuests in Malaysian schools. The fourth part of the questionnaire focused on how much training the respondents felt was necessary to develop and use WebQuests. A Likert-type scale was used to measure the extent to which the respondents agreed to the 26 statements in the second to the fourth sections. Percentages, mean scores as well as the median were used for analysis. However, only mean scores of the summated scores for each section were statistically analysed as their analysis is less controversial than the statistical analysis of the mean scores of individual items on a Likert scale (Clason & Dormody, 1994). In the final section of the questionnaire, three questions that examined the appropriateness of the WebQuest were posed. Sample questions from each section of the questionnaire are discussed in the Findings and Discussion section.

Studies regarding teacher perception toward technological innovations are quite common. In a study by Gorghiu et al. (2005), for example, 80% of nearly 200 teachers reported no problems in the use of WebQuests. However, their study indicated that while more than 90% of the teachers considered the WebQuest a good or excellent learning method, only slightly more than half considered the activity a good or excellent teaching method. The lower positive perception of the WebQuest as a teaching method compared to the
WebQuest as a learning method seems to indicate some discomfort and uncertainty in the role of the teachers in using WebQuests in the classrooms. Zheng et al. (2005) surveyed pre-service students of various education majors. Their study revealed that “constructive problem-solving, social interaction and scaffolded learning” were seen as important factors in WebQuest learning by the respondents. Based on this finding, the researchers inferred that teachers “need to shift from creating prescriptive learning situations to developing environments that engage learners and require them to solve problems and construct knowledge that is most meaningful to them” (p. 47).

This study anticipates differences in perceptions between the in-service and pre-service groups due to their differences in age and experiences in teaching and technology use. In this paper, the major perceptions expressed by the pre-service and in-service teachers regarding the potential of WebQuests in Malaysian schools are described and compared. Suggestions on integrating WebQuests in Malaysian schools through the acceptance of and implementation by teachers will also be made based on the findings of the study.

Findings and Discussion

The findings of this study will be discussed in two sections with the first emphasising the responses of both groups of respondents in general, and the second highlighting the difference in response between the two groups.

Responses in general. Most of the respondents in this study reported that they were quite comfortable with the use of computers although almost all had not heard of WebQuests prior to the study. Forty eight percent of the respondents stated that they were very comfortable in using computers and 44.2 percent felt comfortable while only 7.8 percent mentioned being either anxious or very anxious when using computers.

The respondents were very positive towards the suggested benefits of WebQuests. On a scale of 1 to 5 with 5 being a positive response, the lowest score obtained for the 15 statements on the theoretical benefits of the WebQuest was 3.73. Ten of the 15 statements obtained scores higher than 4.0 signifying agreement with the benefit described in the statements. The mean score for all 15 statements was 4.11.

Reaction to the practicality of WebQuests in Malaysian schools, however, was relatively less positive. The lowest score for the 6 statements concerning the practicality of the WebQuest was 3.36 which was for the statement on how easy it was for teachers to design these activities. The mean score for the 6 statements was 3.82.

The fourth section examined the extent of training the respondents felt was necessary in order for them to effectively implement WebQuests. Responses to the statements in this section indicated that the respondents felt that teachers required a rather high amount of training in designing and developing all the major sections of a WebQuest. Scores on all five statements ranged from 3.42 to 3.90 with a mean score for the section at 3.72.
Finally, most of the respondents indicated that WebQuest activities are most suitable for students with intermediate to advanced levels of proficiency; and that the activities are appropriate for upper primary, lower secondary, upper secondary and university students. Consistent with the generally positive response given to WebQuest activities, 36.5 percent of the respondents stated that the overall rating of the WebQuest was high while another 57.7 percent felt that it was average. A further 3.8 percent rated WebQuest activities as low.

Comparing in-service and pre-service teachers. The findings indicate no statistically significant differences between the responses of the in-service (Inset) and pre-service (Preset) teachers. The mean scores for the sections on theoretical benefits, practicality, and necessary training for WebQuests are presented in Table 1 below.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Inset mean</th>
<th>Preset mean</th>
<th>mean difference</th>
<th>t</th>
<th>sig 2 tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td>4.20</td>
<td>4.01</td>
<td>0.19</td>
<td>1.83</td>
<td>0.07</td>
</tr>
<tr>
<td>Practicality</td>
<td>3.94</td>
<td>3.69</td>
<td>0.25</td>
<td>1.71</td>
<td>0.09</td>
</tr>
<tr>
<td>Training</td>
<td>3.80</td>
<td>3.63</td>
<td>0.17</td>
<td>0.76</td>
<td>0.47</td>
</tr>
</tbody>
</table>

None of the mean scores of the two groups on the second, third and fourth sections of the questionnaire on the theoretical benefits, practicality and necessary training and preparation for WebQuest activities respectively, indicated a statistically significant difference. Independent samples t-tests revealed no statistically significant values with two tailed tests yielding p values of 0.07, 0.09 and 0.47 for theoretical benefit, practicality and training respectively.

Although the statistical tests did not reveal significant differences between the responses of the in-service and pre-service teacher groups, several observations from the data should be noted. First, the in-service teachers consistently rated the theoretical benefits of the WebQuest higher than the pre-service teachers. Their responses were higher and more positive than the pre-service teachers on all the 15 statements describing the theoretical benefits of the WebQuest. This represents a consistent pattern that differentiates the two groups and, although this study has not been able to show a statistical difference between the two groups, this pattern should not be completely ignored. The teaching experience of the in-service teachers may have influenced them to respond more favourably to the WebQuest while the younger and more technologically savvy pre-service teachers may have had a higher expectation of the WebQuest. These
assumptions, however, remain unresolved in this study and are open to further investigation. It is suggested that a more subjective and open ended approach be adopted in future studies in order to examine these assumptions more closely.

The two groups did not seem to differ in their responses toward the practicality of the WebQuests. On many of the statements in this section, both groups provided almost identical responses for the 6 items. Statement number 16, however, yielded a relatively large difference in response between the two groups with a clear difference in the median. This statement is reproduced from the questionnaire as follows in Table 2 below together with the frequency of responses by each group:

Table 2
Frequency of response to statement 16

<table>
<thead>
<tr>
<th>Statement</th>
<th>Frequency of response</th>
<th>Group</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
<th>Median</th>
<th>Inset</th>
<th>Preset</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>If all the facilities are provided, I will use WebQuests as part of my teaching</td>
<td>Inset</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preset</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>4.50</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

It is not easy to suggest a reason for this difference between the two groups other than to say that the pre-service teachers are not as convinced of the benefits of the WebQuest. Unlike respondents in the in-service group who unanimously agreed to this statement, 3 or 11.53% of the respondents in the pre-service group disagreed while another 7 or 25% were undecided.

A third observation noted from the data was that relative to their pre-service counterparts, the in-service teachers expressed that teachers needed a higher amount of training in preparing for two of five parts of WebQuests. This is indicated by Table 3 below which tabulates responses to the amount of training required in preparing the various components of WebQuests.

As can be observed in Table 3, there are few differences between the two groups. However, the median scores indicate a difference between the groups with respect to how much training is required in order to prepare the introduction and the conclusion sections. Responses by the Preset group indicate that the group believed that these sections do not require as much training as compared to responses by the Inset group.
Table 3.
Comparison of responses for Section C on amount of training needed for teachers.

<table>
<thead>
<tr>
<th>Statement concerning WebQuest</th>
<th>Amount of training required</th>
<th>Group</th>
<th>Low 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Median Inset</th>
<th>Preset</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Preparing the introduction section</td>
<td></td>
<td>Inset</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>12</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preset</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>2 Preparing the task section</td>
<td></td>
<td>Inset</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>16</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preset</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>3 Preparing the process section</td>
<td></td>
<td>Inset</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preset</td>
<td>0</td>
<td>1</td>
<td>9</td>
<td>11</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Preparing the evaluation section</td>
<td></td>
<td>Inset</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>14</td>
<td>8</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preset</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>5 Preparing the conclusion section</td>
<td></td>
<td>Inset</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>14</td>
<td>4</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preset</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>5</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Another observation indicates that the in-service teachers felt that teachers would require the highest amount of training in preparing the process and evaluation sections (22 out of 26 or 84.6% of respondents selecting the 4 or 5 response). The pre-service teachers, on the other hand, believed that the task section required the highest amount of training with 16 out of 26 or 61.5% respondents selecting 4 or 5. Although this study has shown a difference in this respect, it should be remembered that the responses are largely based on perception alone. Respondents were not involved in designing WebQuests but were only exposed to the activities during their classes. The responses may be different had they been required to design and develop WebQuest activities during the treatment period.

Conclusion

WebQuests in the form suggested by Dodge have been in existence for more than a decade. During this time, it has gained much support from a large section of the education community. Nevertheless, research and analysis on the application of WebQuests in the Malaysian scenario has been few and far between. This study has provided some initial insights into how Malaysian teachers may respond to the use of WebQuests. Among others, it has shown that both in-service and pre-service teachers are generally receptive to WebQuests as a teaching and learning tool. However, the findings also reveal that pre-service teachers do not express as positive a view of the use of WebQuests as compared to their in-service counterparts. Although the difference between the two groups of teachers was not statistically established, it remains as an important concern that needs to be addressed or at least further researched.
The integration of WebQuests into the school context in Malaysia needs careful planning and may involve changing perceptions of teachers. The findings of this study indicate that the WebQuest is highly regarded by the teacher respondents in this study and has the potential of being an effective language teaching and learning tool in the country. This study has also shown that teachers react to the WebQuest in much the same way regardless of age and teaching experience. Both the in-service and pre-service teachers in this study were generally receptive of the WebQuest and no significant difference was observed between the responses of the two groups. However, by examining the data in terms of the consistency of the responses, a pattern emerges that may possibly differentiate the two groups according to their familiarity and ability in using the computer. The different responses could be based on computer literacy, experience and expectation and these factors should therefore be considered as potentially important elements in training teachers to use WebQuests effectively in the classrooms. Although largely positive towards the use of the WebQuest, pre-service teachers do not seem as enthusiastic about its benefits compared to in-service teachers. Unlike their in-service counterparts, they also generally consider teachers as not requiring as much training. Future studies on teachers who are actively conducting WebQuest activities in schools would provide deeper insights into how the WebQuest can be better integrated into the classroom.

References


