

BESSH-16**Development and Formative Evaluation of a Technology-mediated Task-based Language Learning Curriculum: with the Implementation of WebQuests**Hiroki Yoshida^{1*}, Akira Nakayama²¹*Department of Elementary Education, Faculty of Education, Tokoha University*²*English Language Program, English Education Center, Ehime University*

Abstract

Task-based language learning (TBL) has been increasingly modified in language learning classes recently and has been recognized as a way forward in communicative language learning. In Japan, task-based language learning has been adopted in many classroom activities but has not been adopted at the level of syllabi or curricula. This study purposed to examine the effectiveness and usefulness of a task-based language learning curriculum that was developed for an EFL class for Japanese university students. WebQuest which is a technology-mediated educational method that incorporates inquiry activities was integrated in the curriculum as learning method that promotes task-based learning. The curriculum was implemented for “Media English I A” and “Media English I B” classes. Participants were Japanese university students who learn English as a foreign language. Results of the study suggest that the task-based language learning curriculum was beneficial to the participants.

© 2016 The Authors. Published by Academic Fora. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)
Peer-review under responsibility of the Scientific & Review committee of BESSH- 2016.

Keywords— WebQuests, Task Based Language Learning, Curriculum Development, EFL

Introduction

The growth of knowledge-based society as a result of the rapid development of information communication technology (ICT) has brought about a substantial change in teaching and learning. Learning is not restricted to learning in the classroom of formal education: it is a dynamic activity that occurs anywhere, anytime, and carried out by anybody. Learners can get information to build up their knowledge in various ways including the Internet. It is almost impossible to imagine a future learning environment without ICT (Punie, et al., 2005).

In order to cope with the structural change of the society, school systems are required to recognize the significance of learning objectives such as social competence, critical thinking, knowledge sharing, and cooperation techniques (Punie, et al., 2008). In the field of language teaching and learning, task-based language learning (TBL) has been increasingly modified in classroom lessons recently and has been recognized as a way forward in communicative language learning.

Furthermore, technology-mediated learning methods that require inquire and problem-solving, and active interaction among the learners such as WebQuest are being used in schools and universities. WebQuest was developed by Bernie Dodge in 1995 and has been widely used in various subjects at all levels. WebQuest is defined by Bernie Dodge, the originator of WebQuests as “an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet.”

A typical WebQuest is composed of six general sections: 1) Introduction, 2) Task, 3) Resources, 4) Process, 5) Evaluation, and 6) Conclusion (Dodge, 2006). The features of the six general sections of a WebQuest can be described as follows:

- Introduction: the teacher provides students background knowledge and an appealing scenario in order to create interest in the upcoming activity (Brito and Baia, 2007)

*All correspondence related to this article should be directed to Hiroki Yoshida from Department of Elementary Education, Faculty of Education, Tokoha University

Email: h-yoshida@av-lab.org© 2016 The Authors. Published by Academic Fora. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Peer-review under responsibility of the Scientific & Review committee of BESSH-2016.

- Task: the teacher provides a task that is “‘doable’ and realistic” and “stresses higher level thinking skills (Schweizer and Kossow, 2007)”
- Resource, the teacher provides “links to high-quality Internet-based resources that students will use to complete the activity (Strickland and Nazzal, 2005)”
- Process: the teachers clearly outlines “the steps a student must complete (Schweizer and Kossow, 2007).”
- Evaluation: the teacher provides students information “to know how they will be evaluated at the end, or how their knowledge will be measured (Greceva and Zdrave, 2004)”
- Conclusion: “the teacher states what the student should have learned and accomplished and why this task was completed (Strickland and Nazzal, 2005)”

Such as in other countries, the significance of inquiry-based learning has been emphasized in Japan. The national curriculum of Japan “Courses of Study” emphasizes interdisciplinary studies, inquiry learning and cooperative learning. With the purpose of fostering interdisciplinary and inquiry-based studies, the “period for integrated studies” was introduced to the “Courses of Studies” in 1998 as means of interdisciplinary and inquiry-based studies, and was implemented in schools in 2002 (Ministry of Education, Culture, Sports, Science and Technology, 1998). The “period for integrated studies” aims to enable students to think about their lives through cross-curricular and inquiry studies, while promoting qualities and abilities needed to find their own tasks, to learn and think on their own, to make proactive decisions, and to solve problems.

Literature Review

Today, information communication technology plays an important role in not only people’s lives but also in language learning classes. Chappelle (2000) noted that the use of ICT in language learning has “become a fact of life”, with the question being asked not “should” but “how can the computer best be used in language teaching?”

Computer-Assisted Language Learning (CALL) has been implemented in many language classes in these three decades. Many studies have shown positive effects of technology-mediated language learning on learners’ academic achievements such as vocabulary acquisition (Chun and Plass, 1996; Ma and Kelly, 2006), reading comprehension (Chun and Plass, 1997; Murphy, 2007), and listening comprehension (Brett, 1997; Grgurović and Hegelheimer, 2007).

Now with the use of computer-mediated communication tools, computer-assisted or technology-mediated task-based language learning is possible in language classes. Torres (2005) designed a WebQuest for Content and Language Integrated Learning (CLIL) purposes. Fontecha (2010) developed a language WebQuest named CLILQuest with a specific role within a CLIL.

Attempts have been made to integrate WebQuests into subject curricula. Gaskill et al. (2006) implemented WebQuests in history and geology school curricula and found that students and teachers both enjoyed learning via WebQuest. AL-Edwan (2014) integrated WebQuests into geography school curricula and found its significantly positive effect on acquiring geographic concepts. However, there are not many attempts to integrate WebQuest into language learning curricula. Especially, in Japan, task-based language learning has been adopted in many classroom activities but has not been adopted at the level of syllabi or curricula. Therefore, in this study, a task-based language learning WebQuest curriculum for Japanese university students was developed and its validity and effectiveness was evaluated.

Purpose

The purpose of the study is to develop and examine the effectiveness and usefulness of a technology-mediated task-based language learning curriculum that was developed for an EFL class for Japanese university students.

The research questions to be addressed in this paper are:

- 1) Is the technology-mediated task-based language learning curriculum developed for an EFL class for Japanese university students valid?
- 2) Is the technology-mediated task-based language learning curriculum developed for an EFL class for Japanese university students effective?

Methodology

The technology-mediated task-based language learning curriculum was developed in January 2010. The task-based language learning WebQuest curricula has been implemented four academic years.

Outline of the technology-mediated language learning curriculum

Two courses: “Media English I A” and “Media English I B” was introduced in the technology-mediated task-based language learning curriculum. In each course, five WebQuests were implemented. The syllabus developed for “Media English I A” is shown below.

Syllabus of “Media English I A”

Course Description

In this course, students search and gather information on a specific topic via the Internet, they analyze and interpret digital media articles, and they express their feelings and ideas in various formats. This course is intended not only to enhance students’ skills in reading and understanding media articles in English, but also to foster their media literacy. The bulk of this course is comprised of lectures, presentations and WebQuests. WebQuests are inquiry-oriented activities in which learners interact with resources on the Internet. The instructor will demonstrate how to use a particular ICT tool, and provide students with key concepts and ideas on using the ICT tool for EFL. Students are required to do activities individually or in a small group.

Aims of the Course

The aim of the course is to enhance:

- students’ skills in reading and understanding media articles in English
- students’ skills to communicate in English via digital media
- students’ media literacy for EFL

Objectives of the Course

At the end of the course, students will be able to:

- gather, assess, collate, edit, summarize and present information for EFL.
- read and understand articles and news in various formats.
- write news columns in English.
- write e-mails and Web-mails in English.
- write English articles using Microsoft WORD.

❖ *Course Outline*

❖ *Module I: Information retrieval for EFL*

- Week 1: Course guidance, using search engines and Boolean search methods for EFL
- Week 2: Using online dictionaries for EFL

❖ *Module II: ICT for enhancing reading and writing skills in English*

- Week 3: Using news search engines in English
- Week 4: Reading newspapers and writing a news column in English
- Week 5: <WebQuest 1> “Visiting a museum”

❖ *Module III: ICT for authentic learning (1)*

- Week 6: Using image and video search for EFL
- Week 7: Using a calculator and unit convertor for EFL
- Week 8: <WebQuest 2> “Take me out to the ball game”

❖ *Module IV: ICT for authentic learning (2)*

- Week 9: Using map retrieval for EFL
- Week 10: Writing e-mails and Web-mails in English
- Week 11: <WebQuest 3> “Making a travel plan”

❖ *Module V: ICT for academic writing in English (1)*

- Week 12: Paragraph writing using Microsoft WORD
- Week 13: <WebQuest 4> “Applying for a university abroad”

- ❖ *Module VI: ICT for academic writing in English (2)*
- Week 14: Writing articles in APA style using Microsoft WORD
- Week 15: <WebQuest 5: Final report> “Writing a country report”

Perquisites

- Basic knowledge and use of Microsoft WORD
- Basic knowledge and use of Microsoft EXCEL
- Basic knowledge and skills of surfing and searching on the Internet
- Basic knowledge and use of e-mail

Course Evaluation

Final mark on the course is to be determined by:

- Assignments: 45% (@3% x 15)
- Final report: 40%
- Class participation: 15%

Procedure of WebQuest Sessions

As described in the syllabus for “Media English IA”, the Media English curricula was composed of six modules. In each module except in the first module, WebQuest was conducted. That is to say, WebQuest was conducted five times during the course.

Each WebQuest session was structured as follows:.

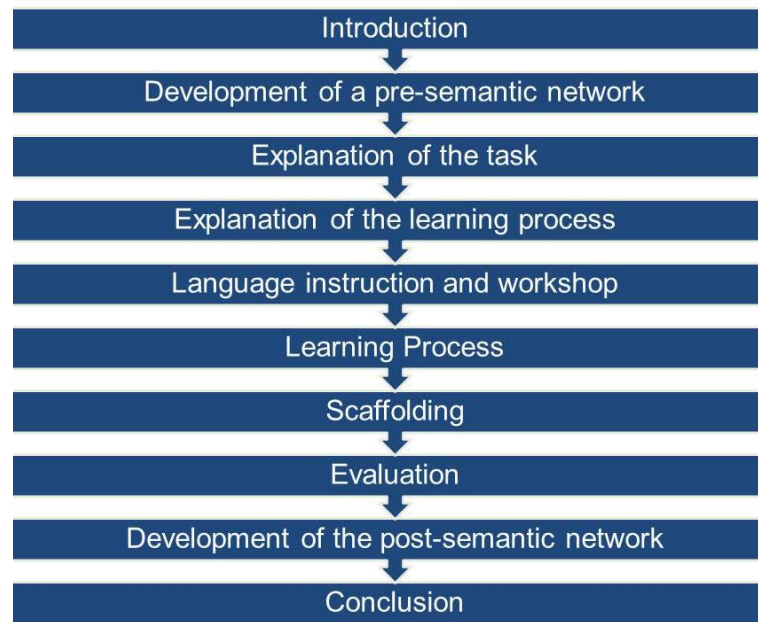


Figure 1: Flow of a WebQuest applied in the study

The content of each element of the WebQuest is outlined below.

Introduction

Background knowledge needed to perform the WebQuest and the scenario was provided to the participants. Below is an example of a scenario used in this study.

“Congratulations! You passed the final exam. You have seven days to travel anywhere outside of Japan. You can travel with your friends in a group of four. You have a budget of 250,000 yen each.”

Pre/Post Semantic Network

A semantic network was used to assess students’ knowledge in English on a specific topic. Semantic Networks are knowledge representation tools consisted of nodes and links between nodes. The nodes represent knowledge or concepts, and links represent relations between the concepts.

In order to assess how much knowledge a participant had on a topic before they worked on the WebQuest activity, participants were required to complete a pre-semantic network in advance of the activity. In order to assess how much knowledge a participant acquired through the WebQuest activity, participants were required to complete a post-semantic network after the activity. Figure 2 is an example of a semantic network developed by a participant.

Participants wrote words in English in principle but they were allowed to write words in Japanese if they did not know how to express the word in English.

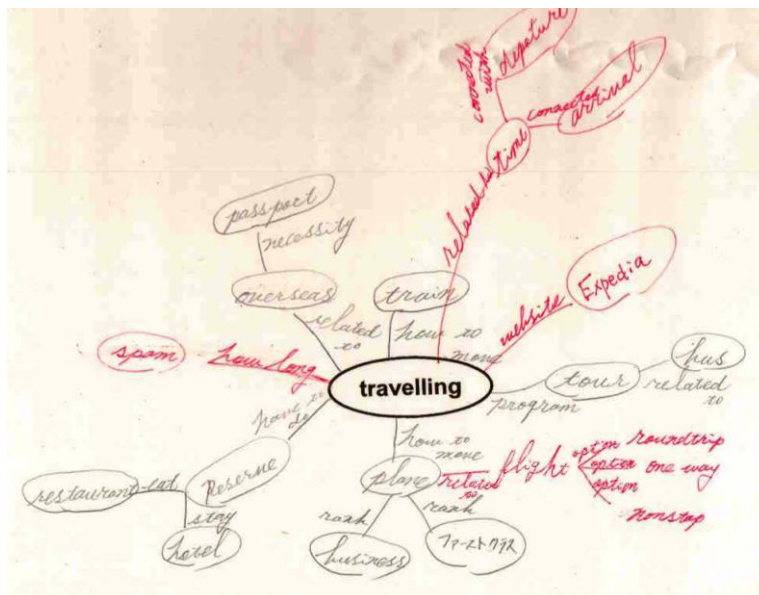


Figure 2: Example of a semantic network developed by a participant

Language Instruction and Workshop

In order to enhance learning in EFL WebQuests, it is important to provide students opportunity to promote use of the target language. Torres (2005) listed seven principles to be applied in a language learning WebQuest. In this study, the following five principles were implemented in the WebQuest curriculum:

1. Authentic materials for the Web must be used in the WebQuest.
2. The level of linguistic knowledge of the students is crucial for the design of the task and process
3. Linguistic and non-linguistic goals should be stated and the task should be designed to attain those goals.
4. The result of the task should be a product that implies the use of the target language.
5. The WebQuest should be planned to practice the language skills the teacher wants students to improve.

Before the participants undertook the task, they studied vocabulary, expressions, and writing skills needed to conduct the WebQuest activity.

Task

A realistic and authentic task was provided to the participants. Below is an example of a task which was introduced to the participants in this study.

Design your vacation with the following parts explained clearly:

- Destination: Where are you going? What is the climate for the summer?
- Accommodation: Where are you going to stay?
- Activities: How are you going to enjoy your vacation? Plan at least two activities a day.

- Food: What are you going to eat? Where?

Resource

A list of Internet-based resources needed to complete the WebQuest task was introduced to the participants. Figure 3 is an example of a list of resources for the WebQuest activity conducted in this study.



Figure 3: Example of a list of resources for the WebQuest

Evaluation

A task-specific coaching rubric on a four point scale with four standards or rating levels: *S* (Exceeds expectations), *A* (Meets expectations), *B* (Needs improvement), *C* (Inadequate) was used to assess participants’ performance on the WebQuest activity. Table 1 is an example of a rubric used in this study.

As previously described, not only linguistic goals but also non-linguistic goals were stated in the task, and therefore, non-linguistic criteria were included in the rubric.

Table 1:

Example of a rubric used in the study

Criterion	S	A	B	C
Making a travel plan	Has gathered enough information and has set a reasonable and attractive travel plan.	Has gathered enough information and has set a reasonable travel plan.	Has gathered enough information, but the travel plan is a bit unreasonable.	Has not set a reasonable travel plan.
Budget planning		Has planned a budget worth 200,000 yen to 250,000 yen.		Has not planned a budget worth 200,000 yen to 250,000 yen.
Creation of an English e-card	Has created an English e-card after a casual English e-mail style and has used emoticons and acronyms effectively.	Has created an English e-card after a casual English e-mail style.	Has created a proper English e-card but is too formal or neutral.	Has created an English e-card but has not followed an English e-mail style. Or has not created an English e-card.

Results

The task-based language learning WebQuest curricula has been implemented from academic year (AY) 2010 to 2013. Hereinafter, results of the four year practice will be introduced.

Participants' Performance in WebQuest

Participants' performance on the WebQuest was evaluated by a task-specific rubric on a four point scale. Table 2 shows the time-by-time changes in participants' scores from.

Table 2:

Time-by-time changes in participants' performances in WebQuest

	WQ 1	WQ 2	WQ 3	WQ 4	WQ 5
AY 2010	2.54	2.00	3.08	3.36	3.14
AY 2011	2.89	2.29	3.05	3.02	3.14
AY 2012	2.67	2.57	2.69	3.12	3.20
AY 2013	2.66	2.51	2.72	3.25	3.24

Results show that participants' performances in the second WebQuest "Take me out to the ball game" was low in AY 2010 and AY 2011. One of the main reasons for the low performances was the use of technical jargon used in baseball. Therefore, the second WebQuest was revised to "Online shopping."

Participants' Attitude toward the WebQuest Course

Participants' attitude toward the task-based language learning WebQuest course was evaluated by a seven item questionnaire on a four-point Likert scale. The questionnaire survey was conducted on January 16th, 2013.

Table 3 shows participants' attitude toward the task-based language learning WebQuest course. The mean was calculated by giving each of the Likert scale points a number value, where *strongly disagree*=1, *disagree*=2, *undecided*=3, *agree*=4, and *strongly agree*=5. Results indicate that participants who experienced the task-based language learning WebQuest course found it interesting and effective.

Table 3:

Participant' attitude toward the WebQuest Course

Item	Mean
1. The contents of the course were interesting.	4.53
2. The difficulty of the activities was appropriate.	4.59
3. The instructor effectively facilitated students' learning.	4.53
4. The contents of the course were easily understandable.	4.27
5. I am satisfied with the course on the whole.	4.43

Discussion and Conclusion

The purpose of the study was to develop and examine the effectiveness and usefulness of a technology-mediated task-based language learning curriculum that was developed for an EFL class for Japanese university students.

Regarding the first research question "Is the technology-mediated task-based language learning curriculum developed for an EFL class for Japanese university students valid?," results of the evaluation scores of task-specific

rubrics show that students who conducted task-based language learning WebQuests increased their performance time-by-time. Results suggest that the difficulty and contents of the WebQuest course were appropriate. Moreover, participants could promote their performance in task-based language learning and got adjusted to the WebQuest activities. However, results suggest that not only the level of linguistic knowledge but also non-linguistic knowledge or content knowledge is crucial in performing a task-based language learning WebQuest.

With regard to the second research question “Is the technology-mediated task-based language learning curriculum developed for an EFL class for Japanese university students effective?,” most of the participants’ noted that they found 1) the task-based language learning WebQuest course interesting, 2) the level of difficulty was appropriate, 3) they were provided effective facilitation, 4) the WebQuest course easy to understand, and 5) the WebQuest course satisfactory.

Although findings of this study provide pedagogical implications of task-based language learning WebQuests, they also have few limitations. Since the participants of this study were Japanese university students who learn English as a foreign language, using other samples from other ages, nationality, prior experience of task-based language learning WebQuest activities, and level of ICT literacy is recommended for future generalization. Especially, it is meaningful to investigate the effects of task-based language learning WebQuests on second language acquisition.

Given the findings of this study, future attempts should focus on investigating facilitation methods and techniques to increase learners’ performance in task-based language learning WebQuest activities. Previous studies suggest the significance of the role of facilitators in computer-mediated inquiry-based learning (Gormally, et al., 2009; Dickson, 2010; Little, 2010; Huss, et al., 2015; Ochola and Achrazoglou, 2015). It is expected to specify the roles and responsibilities of facilitators in WebQuest activities with the aim of helping learners increase their performance in computer-mediated task-based language learning.

Acknowledgment

This work was supported by JSPS KAKENHI: Grant-in-Aid for Scientific Research (C), Grant Number 25350360

References

- AL-Edwan, Z. S. (2014). Effectiveness of Web Quest strategy in acquiring geographic concepts among eighth grade students in Jordan. *International Journal of Education and Development using Information and Communication Technology*, 10(4), 31-46.
- Brett, P. A. (1997). A comparative study of the effects of the use of multimedia on listening comprehension. *System*, 25(1), 39-54.
- Brito, C. Baia, M. (2007). WebQuests: a tool or a transdisciplinary methodology. *Interactive Educational Multimedia*, 15, 52-64.
- Chapelle, C. (2000). *Computer application in second language acquisition*. Cambridge: Cambridge University Press.
- Chun, D. M. & Plass, J. L. (1996). Effects of multimedia annotations on vocabulary acquisition“. *The Modern Language Journal*, 80(2), 183-198.
- Chun, D.M. & Plass, J. L. (1997). Research on text comprehension with multimedia. *Language Learning & Technology*, 1(1), 60-81.
- Dickson, C. A. W. (2010). Evaluating the student experience of inquiry-based learning: an educational initiative. *Practice and Evidence of Scholarship of Teaching and Learning in Higher Education*, 5(1), 33-45.
- Dodge, B. (2006). *Some thoughts about WebQuests*. Retrieved from http://webquest.sdsu.edu/about_webquests.html
- Fontecha, A. F. (2010). The CLILQuest: A type of language WebQuest for content and language integrated learning (CLIL). *CORELL: Computer Resources for Language Learning*, 3, 45-64.
- Gaskill, M., McNulty, A., & Brooks, D. W. (2006). Learning from WebQuests. *Journal of Science Education and Technology*, 15(2), 133-136.
- Gormally, C., Brickman, P., Hallar, B. & Armstrong, N. (2009). Effects of inquiry-based learning on students’ science literacy skills and confidence. *International Journal for the Scholarship of Teaching and Learning*, 3(2).
- Greceva, S., & Zdravev, Z. (2004). Promoting technology in classroom, step by step. *Proceedings of the 2nd International Balkan Education Congress*, 322-325.
- Grgurović, M. & Hegelheimer, V. (2007). Help options and multimedia listening: Students’ use of subtitles and the transcript. *Language Learning & Technology*, 11(1), 45-66.
- Huss, J. A., Sela, O., & Eastep, S. (2015). A case study of online instructors and their quest for greater

- interactivity in their courses: overcoming the distance in distance education. *Australian Journal of Teacher Education*, 40(4), 72-86.
- Little, S. (2010). *Inquiry-based Learning in the Social Sciences: A meta-analytical study*. Sheffield: Centre for Inquiry-based Learning in the Arts and Social Sciences, University of Sheffield.
- Ma, Q., & Kelly, P. (2006). Computer assisted vocabulary learning: Design and evaluation. *Computer Assisted Language Learning*, 19(1), 15-45.
- Ministry of Education, Culture, Sports, Science and Technology. (1998). *Courses of Study*. Retrieved from <https://www.nier.go.jp/guideline/h10e/index.htm>
- Murphy, P. (2007). Reading comprehension exercises online: The effects of feedback, proficiency and interaction. *Language Learning & Technology*, 11(3), 107-129.
- Ochola, J. E., & Achrazoglou, G. J. (2015). Maximizing Opportunities: Smart learning spaces, smarter interactions and collaboration. *Journal of Education and Human Development*. 4(1), 121-132.
- Punie, Y., Zinnbauer, D., & Cabrera, M. (2008). *A review of the impact of ICT on learning*. European Commission, Joint Research Centre, Institute for Prospective Technological Studies.
- Punie, Y., Cabrera, M., Bogdanowicz, Zinnbauer, D., & Navajas, E. (2005). *The future of ICT and learning in the knowledge society*. European Commission, Joint Research Centre, Institute for Prospective Technological Studies.
- Schweizer, H & Kossow, B. (2007). WebQuests: Tools for differentiation, *Gifted child today*, 30(1), 29-35.
- Strickland J. & Nazzal, A. (2005). Using webquests to teach content: Comparing instructional strategies. *Contemporary Issues in Technology and Teacher Education*, 5(2), 138-148
- Torres, T. P. (2005). *A model of WebQuest for teaching and learning an L2*, paper presented at Eurocall 2005. Retrieved from http://www.isabelperez.com/webquest/taller/12/english/handout_wq_12_en.pdf