

# Designing Online Project-based Learning Instruction for EFL Learners: A WebQuest Approach<sup>1</sup>

*Julian ChengChiang Chen<sup>2</sup>, Curtin University, Bentley, WA, Australia*

## Abstract

This action report presents a pedagogically-sound approach to transforming conventional EFL instruction into an active learning environment. Following a constructivist project-based learning (PBL) approach, I propose a WebQuest learning module to demonstrate how EFL teachers can capitalize on cost-effective and user-friendly website builders to create a WebQuest site. Following WebQuest principles, the module includes an introduction of an engaging real-life task, a task procedure, selected online resources for task completion, a project evaluation, and a culmination of student reflection. The synergy of the Internet and the PBL WebQuest optimizes higher-order thinking and problem-solving skills, fosters learner autonomy and motivation, and promotes language use for real-life purposes.

## Resumen

Este informe de actividad presenta un enfoque pedagógico sensato para transformar la instrucción de ILE convencional en un entorno de aprendizaje activo. Siguiendo un enfoque de aprendizaje basado en proyectos constructivistas (ABP), propongo un módulo de aprendizaje de WebQuest para demostrar cómo los profesores de ILE pueden sacar provecho de los creadores de sitios web costeables y fáciles de usar para crear un sitio de WebQuest. Siguiendo los principios de WebQuest, el módulo incluye una introducción a una tarea atractiva de la vida real, un procedimiento de tarea, recursos en línea seleccionados para completar la tarea, una evaluación del proyecto y un cierre de reflexión del estudiante. La sinergia de Internet y ABP con WebQuest optimiza el pensamiento de orden superior y las habilidades de resolución de problemas, fomenta la autonomía y motivación del alumno y promueve el uso del lenguaje para propósitos de la vida real.

## Introduction

Although incorporating communicative and task-based approaches in English instruction has grown in popularity over the past two decades, rote-drilling and teacher-led instruction are still exercised in EFL classrooms in such countries as China, Korea and Japan (Cheng, 2000; King, 2012; Seargeant, 2009). In such contexts, repetitive practices dissecting decontextualized language components to pass school- or nationwide English language examinations are not uncommon. Student motivation towards English learning, in this case, is dampened by the “teaching-to-test” model that downplays the aim of language use for communicative and authentic purposes. The skewed emphasis on teacher-centered, grammar-driven instruction also leads to the negative washback on EFL learners’ development of high-level cognitive processing, second language acquisition and lifelong learning (Chang, 2011; Huang, 2015). Also worth noting is the burgeoning trend of teaching English in web-mediated environments (Cheon, 2003; Cummings, 2004; Dunbar, Linklater, & Oakey, 2000). Since the Internet closely aligns with students’ day-to-day practices (e.g., emailing, gaming, social networking, texting), it opens up a dynamic arena for learners to use English meaningfully in real-life situations. Implementing a web-based instruction in EFL settings, hence, has the pedagogical potential to accommodate EFL learners’ digital learning styles and interests (Dede, 2005; McGlynn, 2005). For example, authentic online materials can connect learning to the real world, and a web-mediated, project-based approach can further integrate content and language through collaborative scaffolding and meaningful inquiries (Chen, 2012; Ebadi & Rahimi, 2018).

Despite the pedagogical benefits indicated above, not all EFL teachers are familiar with the design of project-based instruction configured on the web, and as such, they inevitably fall back into their teaching comfort zone *sans* technology (Al-Jarf, 2004). Concerns, such as the difficulty of developing a web-mediated course, the workload involved and the lack of technical support, tend to arise and lead teachers to stray away from incorporating online project-based instruction in EFL teaching (Yang, 2001). In response to this issue, this action report aims to demonstrate a viable and cost-effective online learning module that transforms traditional English instruction and mitigates the constraints of a physical EFL class. Through a theoretically-sound, pedagogically-feasible module design, EFL students negotiate meaning in the target language and learn how to search, organize and synthesize information online in collaborative peer groups to accomplish

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<sup>2</sup> [Julian.Chen@curtin.edu.au](mailto:Julian.Chen@curtin.edu.au)

an inquiry-based project. They not only draw upon their cultural knowledge in their L1 and prior experiences, but they also co-construct new knowledge and develop a language repertoire pertinent to real-life problem-solving tasks.

In the following, I illustrate how to optimize student language proficiency, collaborative learning and problem-solving skills through the design of a web-mediated module, WebQuest, guided by project-based learning (PBL). I first present the conceptual framework of PBL under the constructivist paradigm to situate the WebQuest module and argue why incorporating web-based PBL into English instruction can enhance EFL students' learning outcomes. Then I demonstrate how to implement this web-based module in the EFL context and discuss how to evaluate the intended goal.

### **Conceptual framework**

Project-based learning (PBL) is a constructivist approach to instruction that helps students acquire higher-level content knowledge, problem solving and social skills while solving real-life problems (Krajcik & Blumenfeld, 2006; Thomas, 2000). With the surge of online resources, teachers and curriculum designers have begun to consider transforming traditional instruction into an active online learning environment that enables collaborative learning and learner-centered activities (Bell, 2010; Krajcik & Shin, 2014). The implementation of PBL on the web, however, may present both challenges and opportunities to conventional teaching in an EFL class.

Specifically, how do EFL teachers design and implement an online language learning module following the constructivist, PBL framework?

#### *Constructivism*

As the Chinese proverb goes, "Tell me, I'll forget. Show me, I'll remember. Involve me, I'll understand." Indeed, constructivism, one of the influential learning theories emerging in the 1970s, asserts that "learners must have an active role in the learning process; that they are not receptacles to be filled but rather engineers of their learning... by having their experiences situated in reality" (Smaldino, Lowther, & Russell, 2008, p. 41). In other words, the key to constructivist learning is to connect the learning materials to the real world so that students can apply their prior knowledge and experiences to optimize learning in real-life situations. As such, learners actively construct knowledge by processing and integrating their newly learned knowledge with their prior knowledge. Hence, constructivism goes beyond the "classic" behaviorism that emphasizes conditionally-controlled and stimulus-response learning (Brown & Green, 2006).

John Dewey (as cited in Duffy & Cunningham, 1996) heralded the constructivist paradigm in that students can only learn when they are actually "doing" a meaningful task connected to lived experiences. In doing so, the new knowledge gained from authentic learning experiences can be reconstructed (Wilson & Lowry, 2000). That is, students are able to process new knowledge of a task more easily if it taps into their background knowledge and prior experiences of the task. Vygotsky (1978) also stressed the importance of social learning environments that shape the way individual learners think and learn, which are mutually shaped by their practices and interactions with other community members, such as peers, teachers and parents (Smaldino et al., 2008, p. 43). From Vygotsky's perspective, constructivism conceptualizes learning as a process of constructing meaning about or making sense of our experiences in the world. That is, learners' cognitive processes are not static but ever-changing in ways that impact the development of higher-order thinking skills. These concepts foreground the overall constructivist learning framework and yield pedagogical implications for teaching and learning. These learning conceptualizations are also referred to as *active learning*, *learning by doing* or *sociocultural learning*.

Drawing from the constructivist underpinnings, Savery and Duffy (1996) further proposed eight constructivist principles that guide the instructional design for learning environments:

1. *Anchor all learning activities to a larger task or problem.*
2. *Support the learner in developing ownership for the overall problem or task.*
3. *Design an authentic task.*
4. *Design the task and the learning environment to reflect the complexity of the environment they should be able to function in at the end of learning.*
5. *Give the learner ownership of the process used to develop a solution.*
6. *Design the learning environment to support and challenge the learner's thinking.*

7. *Encourage testing ideas against alternative views and alternative contexts.*
8. *Provide opportunity for and support reflection on both the content learned and the learning process (pp. 137-140).*

An exploration of how the above-mentioned constructivist principles facilitate the delivery of teaching and the learning process warrants investigation. Kirkley and Kirkley (2005) suggested that simulation/virtual games or problem-solving case scenarios can be incorporated into an instructional design to promote tasks that are intellectually challenging and pedagogically engaging. Students can experience task authenticity in a real-world problem-solving scenario to “experience, manipulate and learn from interactions with multiple complex variables that reflect authentic relationships and that change over time. This provides the opportunity to examine alternative views and test one’s ideas against other views” (p. 45).

### *Project-Based Learning*

Effective instructional design motivates active learning techniques, fosters knowledge reconstruction, encourages critical reflection and facilitates evaluation of the learning process (Krajcik & Blumenfeld, 2006). PBL promotes learner-centeredness and organizes learning around cognitively challenging and meaningful tasks that transcend the classroom walls (Krajcik & Shin, 2014). Those tasks also tap into real-life inquiries that propel students to engage in “design, problem-solving, decision making, or investigative activities;” which “give students the opportunity to work relatively autonomously over extended periods of time; and culminate in realistic products or presentations” (Thomas, 2000, p. 1). Other salient PBL features include real-world relevance, authentic assessment, teacher facilitation, peer collaboration, reflection and enhancement of higher-order thinking skills (Thomas, 2000). As such, the suggested learning outcomes are students’ self-confidence, sustained motivation, and the capacity to organize work plans (Bell, 2010). The sociocultural learning notion also translates into PBL in that learners work with peers to brainstorm ideas, negotiate meaning and collectively resolve complex real-life problems evidenced in different representations of proposed solutions (Bell, 2010; Krajcik & Blumenfeld, 2006).

Research has shown that web-based technology can play a pivotal role in structuring and facilitating PBL delivery in the digital age (Bell, 2010; Krajcik & Shin, 2014). Online collaborative projects and web publishing prove to be a viable alternative for teachers to enhance the implementation of PBL. The dynamic synergy of technology and project work fosters students’ sense of engagement and self-efficacy through actively leveraging task authenticity by connecting new knowledge to real-world scenarios (ChanLin, 2008). Web-based technology also serves as a springboard for EFL learners to process the researched resources in the target language at their own learning pace and actively interact with the contents before showcasing the end product. They also learn how to negotiate meaning collaboratively with peers in order to accomplish their project. As such, this dynamic learning process transforms the “passive learning” role traditionally played by the students into an active “agent” who has autonomous control over their learning as supported by technology and scaffolded by the teacher (Ravitz & Blazevski, 2014).

### **Weave it all together: WebQuest**

According to Bernie Dodge (1997), a WebQuest is “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 videoconferencing.” Dodge further identified WebQuests with two instructional goals: the short-term WebQuest is geared towards knowledge acquisition and integration and can be completed in a short instructional duration, such as one to three class periods. The long-term goal of WebQuest is to extend and refine students’ knowledge for a duration of approximately one week to a month in a classroom setting. After completing a long-term WebQuest project, students create an end product to showcase their understanding of the content materials by applying it to the target real-life situations while co-constructing new knowledge with their peers. The whole WebQuest process not only develops students’ critical thinking skills by challenging them cognitively (Ebadi & Rahimi, 2018), but it also engages them in analyzing, reflecting and evaluating their learning outcomes related to meaningful real-life problems (Dodge, 2001). Hence, the inquiry web-based approach holds pedagogical potential to empower students and motivate them to learn outside the box (Chang, Chen, & Hsu, 2011).

Dodge’s seminal WebQuest applications have gained attention among teacher educators and researchers, who seek to explore how WebQuests can benefit not only higher-order thinking skills of language learners, but also language gains in receptive and productive skills. For example, Laborda (2009) vividly presented a WebQuest module on the topic of tourism to foster EFL students’ oral communication skills. He suggested

that project work embedded in the WebQuest should tie to “experiential learning” that is meaningful and motivating to students (p. 265). Consequently, students develop digital literacy competence via an online search for useful information in multimodal representations (text, image, audio, video). Engaging in collaborative projects can also increase students’ vocabulary, writing, communication, and social skills (Chen, 2012; Ebadi & Rahimi, 2018). Recent studies support these positive claims that investigate the link between WebQuests and second language learning, such as problem-solving skills and knowledge application (Aydin, 2016), discovery and scaffolded learning (Şahin, & Baturay, 2016), enhancement of the four skills and cultural competence (Renau & Pesudo, 2016; Teng, 2018) as well as a heightened student motivation and learner autonomy (Liu, Huang, & Xu, 2018).

### **Implementation plan**

Drawing upon the constructivist PBL model, I propose an implementation plan to illustrate how to optimize EFL students’ learning outcomes through a WebQuest learning module design:

#### *Objectives*

Dodge’s critical attributes of WebQuest (1997) guide this online learning module design based on the following principles:

1. An introduction that sets the stage for the project task.
2. A problem-solving task that is interesting to students and related to the real world.
3. Information sources that are conducive to the task completion, such as carefully selected web resources, searchable databases, and printed documents or books accessible by the students.
4. An explicit description of the step-by-step process in accomplishing the task.
5. Interactive collaboration among students through project-based group activities in order to develop autonomy in learning.
6. Guidance provided on how to organize the information gathered in order to present students’ project work.
7. A conclusion that summarizes the quest results, scaffolds reflection and evaluation of the project, and promotes extending the learning experience to other real-world inquiries.

#### *Design*

To develop a meaningful and thought-provoking WebQuest project, EFL teachers can choose a content-specific and interesting topic that engages students in their project work. For instance, EFL students can be introduced to a real-life scenario where they plan a trip to a foreign country (e.g., Scotland) and need to undertake several tasks before traveling. With a limited budget and an allocated travel duration, students plan an itinerary while adhering to the required tasks, such as transportation, accommodation, things to do, places to visit, a daily budget to spend, etc. They have to work with peers to brainstorm ideas, negotiate meaning, search for authentic information in English, lay out the day-to-day itinerary and orally present their travel plan in English. After teachers identify the project goal and tasks, they can start creating a WebQuest site that capitalizes on authentic web resources and task-specific source materials. Worth noting is that the use of web design software (e.g., Adobe Dreamweaver and Flash) or knowledge about HTML coding are not imperative for EFL teachers to create a WebQuest site. Thanks to the advancement of Internet technologies that have made web design more accessible, teachers can easily create a class site via free, user-friendly website builders (e.g., Google Sites, Wix, WordPress) and edit and publish the site anytime, anywhere.

Figure 1 illustrates a sample WebQuest learning module using the features on Google Sites to build the site: <https://sites.google.com/view/webquest-project-edinburgh/home>.



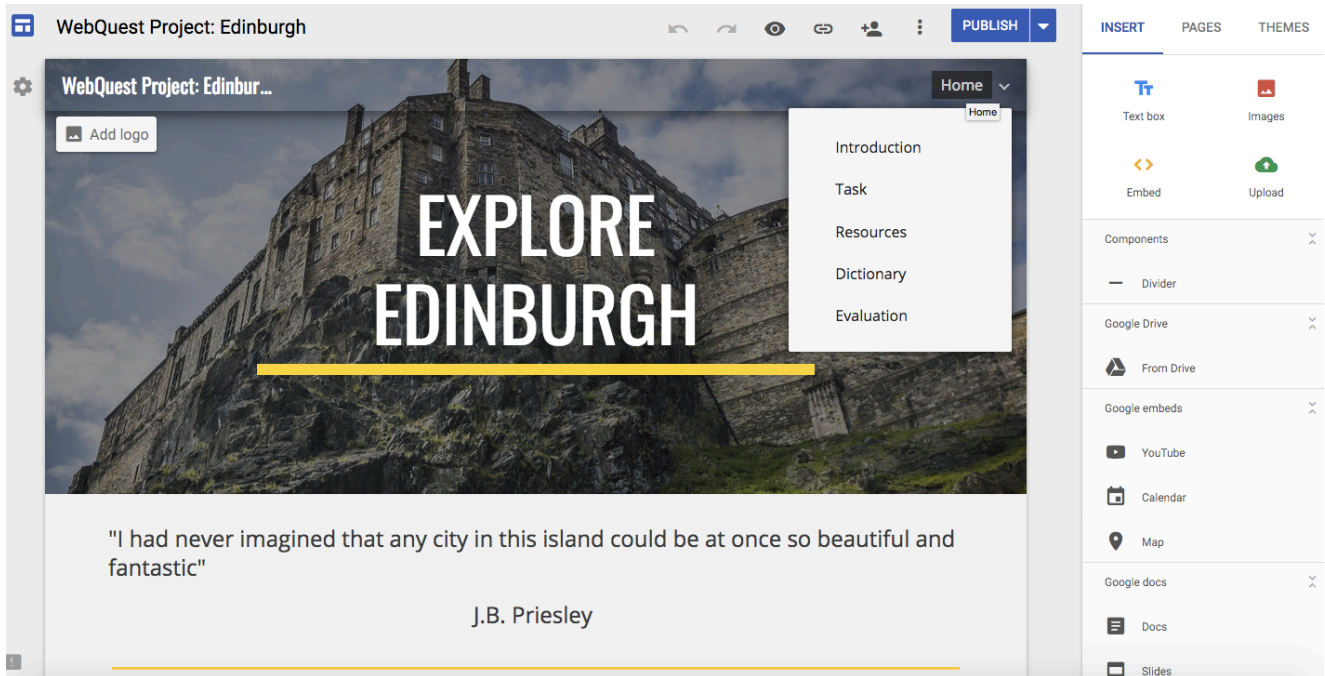


Figure 1. A WebQuest project site on planning a trip to Edinburgh

To provide EFL teachers with concrete lesson planning, Figure 2 further shows a screenshot of one of the WebQuest lesson components that demonstrates how EFL teachers can teach students to organize their itinerary through the Inspiration graphic organizer software (<http://www.inspiration.com>). Each lesson lays out the progression of activities in relation to the WebQuest site supported by multimedia technology, content and language objectives (e.g., understanding the specific language used in the travel sites), materials needed (e.g., Inspiration software) and target strategies (e.g., metacognitive and social strategies). This detailed version of the WebQuest lesson plan is intended for a Taiwanese technical college EFL class and can be accessed at <https://goo.gl/N2YJqJ>.

Context	Class Time	Proficiency Level	Age	Native Language	Gender	Prior Language(s) Learning
EFL sophomore students in a Practical English class at a technical college in Northern Taiwan	2 hours	Intermediate- low/mid	20-21	Mandarin Chinese Taiwanese (dialogue)	M: 9 F: 11	Most have learned English as a foreign language since grade 7 or grade 4 in formal schooling with 2 hours per week; some had private tutoring experience

**Graphic Organizer + Outline**

**I. Edinburgh**

**A. How to get there?**

1. Plane  
It's faster and saving more time on travel.

**B. When to go?**

1. Summer  
1. Summer is better because it's not too cold and there are more events held at that time.  
2. It's easy to pack because we don't need to bring too many heavy clothes.
2. Fall

**C. Where to stay?**

1. Luxury Hotel
2. B & B  
Since we have a tight budget, bed and breakfast might not be a bad choice. Besides, they also provide breakfast!!
3. Friend's house

**D. What to do?**

1. Castle  
I've never seen a castle in my life. I definitely will not miss on it!
2. Festival

**E. Cost**

Everything has to be cheap and cheerful.

Figure 2. A WebQuest lesson outlining the travel plan to Edinburgh via the Inspiration software

### *Evaluation and reflection*

According to Dodge (1997), the final principle of a WebQuest is to evaluate the extent to which students have accomplished their final project task, such as asking students to deliver an oral presentation on their WebQuest findings. In our case, EFL teachers indicate on the WebQuest site (Explore Edinburgh) that students showcase the end product of their teamwork—a detailed travel plan to Edinburgh that addresses all the subtasks. To ensure that students know how they are evaluated, teachers should also explain in advance an evaluation rubric that addresses the presentation criteria in content, delivery, organization, etc., and uploaded it to the Evaluation section on the WebQuest site. Depending on the levels of English proficiency of the target students, EFL teachers can prompt students to reflect on what they have learned in this WebQuest project by responding to an exit slip or writing a brief reflection report. For teacher's professional development, teachers can also self-evaluate or invite colleagues to assess their created WebQuest site following the rubric criteria (see Pickett & Dodge, 2007). From the constructivist PBL standpoint, EFL students not only learn by doing, but also actively negotiate meaning with team members to make sense of the project work. More importantly, they co/reconstruct new knowledge through researching, selecting, analyzing and synthesizing findings before their final presentation (Chang et al., 2011). Hence, students' extensive exposures to authentic input, integration of content and language, peer interaction and oral presentation output help bridge the original language barrier. The sense of autonomy and achievement attained throughout the WebQuest project can further reinforce student motivation and attitudes towards lifelong English learning.

### **Concluding remarks**

The goal for this action report is to explain how EFL teachers can utilize a WebQuest as an online inquiry module to engage students in solving a real-world problem that is motivating to them while providing opportunities for them to take control of their own learning. Since the World Wide Web offers rich and authentic sources and connects to a myriad of real-world tasks, WebQuest serves a viable mechanism that stimulates students to solve real-life problems in the target language beyond the conventional EFL classroom. It also fits into the PBL model that promotes collaboration and transforms traditional teacher-led instruction into active learner-directed learning. The major issue that EFL teachers have about the cost-effectiveness and user-friendliness of implementing web-based technology in instruction can also be resolved since a WebQuest learning module can be easily delivered and created via ready-made website builders without programming or coding knowledge. Teachers' confidence level will gradually grow after their first WebQuest is created. The valuable know-how can also be transferred across different content domains to facilitate their future teaching. The dynamic duo of a PBL WebQuest and the Internet opens up a viable channel for EFL teaching and learning.

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