EMERGING TECHNOLOGIES
Language in Action: From Webquests to Virtual Realities

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English is the lingua franca of the Internet and as a consequence the World Wide Web offers a rich bounty for ESL and EFL teachers and learners. It also represents a vast repository of misinformation, poor language use, and potentially offensive material. There are any number of possible approaches to avoiding the pitfalls of the Internet while exploiting efficiently its resources and connectivity for language learning. We will focus in this column on some of the methods pioneered particularly by ESL professionals such as Webquests, MOOs, and chatterbots, as well as some recent innovations made possible by advances in mobile technology. The emphasis throughout will be on technology uses which place language learners in the role of active participants and the teacher in that of facilitator.

Webquests

Webquests have been used in one form or another since the Web began to become popular and to be used in instruction with the arrival of the Mosaic browser in 1993. Bernie Dodge of San Diego State University is usually identified as the originator of the concept of the Webquest, which he defines as "an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet, optionally supplemented with videoconferencing." This description makes it clear how compatible the concept is with task-based language learning. Moreover, using the Web as a source of real-world information is in line with another important component of contemporary language learning methodology, the use of authentic language materials. At its simplest, a Webquest provides a means of supplying to students a topic-oriented hotlist of Web sites as a starting point for gathering information. Usually Webquests are group activities with an end goal of creating a document that collects, summarizes, and synthesizes the information gathered. This may take the concrete form of writing a report, giving a presentation, filling out a questionnaire, or creating a Web site. The tasks can be simple, short-term, and direct (ordering a meal from an on-line menu) or more complex and long-term (planning a semester abroad at a university in the target culture). Typically a Webquest is clearly structured into components, which include an introduction (why do this activity), tasks (what is supposed to be accomplished), process (how to go about it), and an evaluative/concluding section. Often motivational elements are added (e.g., gaming aspect, extra credit, contest), which might include groups competing against one another.

Webquests tend to be student-oriented and collaborative, with students engaged in constructivist activities resulting in shared learning experiences and new knowledge based on enquiry-oriented language use and Web research skills. The Webquest design patterns illustrate a great variety of types of Webquest, many of which (e.g., "Persuasive Message," "Travel Account," "Exhibition," "Parallel Diaries") could be easily adapted to language learning scenarios. Indeed, as the resource list at the end of this column demonstrates, Webquests for many different target languages and cultures have been created since the late 1990's. They range in topic from the Holocaust to food dishes, with many dealing with geographical entities (The Eiffel Tower, Andalusia, Bavaria, Ellis Island, the Grand Canyon), historical characters (Johannes Guttenberg, Eva Peron, Giuseppe Verdi, Brutus), or literature (Wuthering Heights, Shakespeare, Harry Potter).

The Dutch project "Talenquest" (Dutch for LanguageQuest) has developed a useful set of guidelines (PDF) for the creation of Webquests intended for use in language learning. The task should promote use of the target language, should require use of the same kinds of authentic materials used by native speakers, and require meaningful communication for the production of the end product. The emphasis is

placed on creative and flexible use of language in the accomplishment of an open-ended task of genuine interest to the students involved. As expressed by Ton Koenraad, the goal of the Talenquest project is to replace the fossilized content of textbooks with real-world, dynamic content designed for use at a variety of skill levels. An aspect of this goal is to help students become autonomous (and motivated) learners through the development of study/research skills and critical analysis. Integration of multimedia and inclusion in student language portfolios are also desirable. An interesting Talenquest created by Koenraad for intermediate EFL learners deals with the topics of Weblogs in education and illustrates the approach described here.

Simulated Immersion

While Webquests foster cooperative learning through guided discovery, they do not generally provide a means for the individual practice of communication skills. For written practice, e-mail exchanges and tandem learning are often used. MOOs offer another option. Short for the ponderous "Multi-User Domain Object Oriented," MOOs create a (usually) text-based virtual reality. One interacts with other participants (often through graphical "avatars" or symbolic representations of oneself) in "rooms" which may represent topics, user groups, or functions. Like a chat room, a MOO is a synchronous environment in which users interact in real time. However, MOOs offer a clearly defined virtual environment with specific roles and conventions. As a consequence, some user orientation is generally necessary. In language learning environments, both chat and MOOs offer the option of archiving sessions, which can then serve as the basis for review and discussion of language usage and mechanics.

There are an especially large number of MOOs for ESL, including SchMOOze, established in 1994. Students have the possibility in visiting SchMOOze for one on one or group interactions, as well as access to an on-line dictionary and learning games. As is the case for most MOOs, access is either through a Telnet session or through Java-enabled Web browser. MOOs are available in a variety of languages; some are designated for discussion of specific topics such as fairy tales or science fiction. MOOs can be used in combination with other tools, such as email exchanges, as Klaus Schwienhorst describes, in using the Diversity U MOO together with tandem partnerships and other on-line resources. MOOs can also be combined with blogs or wikis to create an integrated language learning environment, which combines synchronous and asynchronous tools.

Originally text-based, MOOs soon added graphical elements as well as, in some cases, audio capabilities. More recently, 3-D has been added, often using VRML (Virtual Reality Modeling Language). Unfortunately, VRML has not been widely embraced, in part because of the need to view pages in specialized browsers. A number of implementations have developed quite sophisticated multimedia environments, mostly in closed, proprietary systems. Virtual Reality (VR) environments in fact offer obvious interest to language professionals. We all know that immersion in the target culture/language is the optimal way to learn a language, and simulated realities aim to offer a more modest version of that experience. The JEWEL electronic learning space, for learning Japanese, and the Babel-M proposal are sample projects for developing 3-D VR environments for language learning. The VIRLAN language learning network is being developed by a consortium of European research institutions and software companies and is aimed at providing on-line language learning for primary school age children. Zengo Sayu, developed by Howard Rose, is a VR Japanese language learning environment in which students interact with objects which talk. They carry out tasks with the objects such as ordering and building. The program uses digitized voice samples for speech reproduction and includes voice and gesture recognition capabilities.

A sophisticated VR program for learning Arabic, the Rapid Tactical Language Training System, has been developed at the University of Southern California for use by the U.S. Army. It uses natural language processing (NLP) and speech recognition/synthesis to create an interactive simulation of conversations with native speakers. The system includes sophisticated tracking capabilities to record individual student

achievements and gaps. The program also instructs the users in non-verbal communication and introduces key aspects of everyday culture. The interface is similar to that of a videogame, with the user moving through a village, interacting with animated Arabic speakers. The idea is, as in a game, to move on to the next level. A short video demonstrating the software is available (Quicktime). The Advanced Maintenance Assistant and Trainer (AMAT), developed by the Research Triangle Institute, is a similar project.

For simulated immersion to be successful, large demands are placed on the capabilities of natural language parsers/grammars and on speech systems. The effectiveness of conversational exchanges relies on the ability of artificial intelligence to understand human language and to generate logically consistent and realistic responses. There have been many projects since the pioneering Eliza of the 1960s to create electronic conversation partners or chatterbots. Early programs mimicked psychological therapy sessions, and were constructed around pattern matching, which simply parse input looking for key words which then generated (usually) automatic responses. Since then chatterbots have become considerably more sophisticated. Most use some form of NLP and may have graphical and/or audio interfaces. Chatterbots have been developed to communicate in a variety of languages. Many have specialized vocabularies or topics for discussion. As an illustration, there are German bots for topics as diverse as bottled water, Vorarlberger basketball, gasoline, satanism, Citroën cars, and women in the German army. Many of these are Parsimony-Bots, which, as is the case with many chatterbots, learn as they are used, with the added feature of these bots gaining knowledge and vocabulary from associated discussion forums.

Field Trips and Mobile Technology

Technology advances are not only helping to create virtual language learning environments, but also contributing to adding a new dimension to real-world language learning and cultural experiences. When students go on field trips or participate in study abroad tours, they often write a journal describing their experiences. This may include pictures and possibly video clips. The journals can serve as learning vehicles for students not having participated. New mobile technologies have added another possible scenario for interactions between students in the field and those in the classroom. Portable computing devices (hand-helds, PDA cell phones, Tablet PCs), combined with wireless networking, can connect participants in geographically diverse locations, offering as well the opportunity for cooperation and collaboration among schools and students in different countries. What is beginning to make this a viable possibility is not just the wide availability of powerful compact computers, but also new wireless networking options, including 3G (third generation digital phone networks) cellular and wide-area Wi-Fi networks. Successors to the current Wi-Fi standard (801.11b, a, g) such as 802.16 (Wi-Max) and 802.20 (Mobile-Fi) promise faster speeds, ubiquitous coverage, and mobile tracking.

One of the most intriguing current projects embracing these technologies is RAFT, "Remotely Accessible Field Trips," a project of the Fraunhofer Institute, with a number of partners in Europe and Canada. The idea is that groups of students go out in the field, while other students and classes from remote schools participate through the Internet. The students are equipped with mobile computers as well as recording devices (audio, video, still pictures). They are given specific assignments related to the site they are visiting; these are typically group tasks. Part of the RAFT system is a learning management system that facilities the storing and processing of data collected, so as to allow for storage and retrieval of individual documents or complete trip information. The system can be used on hand-held devices as well as on laptops. The data is saved as reusable learning objects, using approved meta-data and packaging standards. As with Webquests, RAFT uses templates to help teachers design projects. The template is divided into sections (before, during, and after the field trip, references) with clearly delineated roles for both classroom and field participants. RAFT is not specifically designed for language learning; the sample field trips available on the Web mostly relate to history and geography. However, language and

cultural learning could clearly be targeted by RAFT projects. Students in study abroad trips could, for example, conduct interviews which would be shared with other students or groups. As portable devices become more powerful (and, one would hope, more affordable), and wireless networks more broadly available, new possibilities for combing real-world experiences with electronic resources will likely become available.

RESOURCE LIST

Webquests

General Info

- The WebQuest Page from San Diego State University
- WebQuest Portal good place to start
- Blogs & Wikis as WebQuest Tasks combining Webquests with other technologies
- Webquests for language learning links from the University of Pittsburgh
- Atricles on ESL Learning, WebQuests and Computer Technology from Nellie Muller
- Webquests on LanguageQuests
- Computers in Language Learning and Linguistics (ENG 4004) Webquest on Webquests for ESL
- WebQuest: task-based learning in a digital environment from Babylonia
- WebQuests geared towards use in primary schools
- Mini Web Quests for ESL
- WebQuests talk introduction with good links
- Language Learning Center about Webquests from Bryn Mayr College
- A WebQuest about WebQuests
- Matrix of Example WebQuests
- Canadian WebQuests claims to be the "The world's largest searchable directory of reviewed WebQuests"
- TalenQuest and the FL Curriculum by Tom Koenraad
- Webquests and Modern Languages by Ton Koenraad
- Criteria for Language Webquests from the TalenQuest site (PDF)
- Selbstständig lernen mit WebQuests Learning Independantly from Webquests (in German, by Wolfgang Steveker)

English

- Weblog, Edublogging, Schoolblogs?? a Talenquest for intermediate EFL students by Ton Koenraad
- Life in the Tenements
- The British Airways London Eye: A Webquest
- Wuthering Heights WebQuest
- WebQuest "The British School System"
- The long way to America Webquest on Ellis Island
- William Shakespeare
- Harry Potter and the Dutch Wizards
- Christmas
- Movie Presentation
- Imagination Voyages planning a trip to the Grand Canyon

French

- La Tour Eiffel: cyber-enquête French language Webquest

- Missions virtuelles French
- Un Concert Bénéfice French
- Une journée à Nice French language Webquest
- Faisons un petit rêve ensemble! French

German

- Wilkommen in Bayern
- Immigrants From Germany
- Holocaust: A WebQuest
- Johannes Gutenberg
- Auf nach Bayern! German
- Nuremberg Laws WebQuest an Internet WebQuest on Nuremberg Laws
- German Food Webquest
- Taschengeld Webquest

Italian

- Italian WebQuest Resources list of Webquests

Japanese

- Blue Skies All the Way to Japan Japanese
- Would You Live in Japan for one Year?? a Webquest for Intermediate Students
- Japan Newspaper Webquest a Webquest for 6th-8th graders
- Discover Japan WebQuest Japanese
- A Voyage to Japan Japanese
- Journey to Japan: A Day in the Life of a Japanese Child Japanese

Latin

- Webquests for Latin and the Classics extensive list

Spanish

- Andalucía... hipotética ... Una aventura Web (WebQuest)
- Navegar É Preciso...
- La crisis en Argentina Spanish language Webquest
- ¡Quiero Viajar a Españ
- NicaraguaQuest
- Eva Duarte de Peron...Worthy to Celebrate?
- De excursión a Galicia
- Bienvenidos a Madrid Una aventura Web
- Speak Spanish in Valencia a WebQuest for college Spanish students
- Spanish Food Webquest: ¡Qué Sabroso!

Virtual Immersion

- MOOs and Language Learning good introduction
- Language Learning in MOO by Lonnie Turbee
- What is a MOO good introduction
- Language & ESL MOOs Comprehensive list
- SchMOOze MOO for ESL
- Diversity U a MOO, which has an optional VRML interface
- JEWELS Introduction VR environment for Japanese
- Babel-M description of a VR environment for langauge learning

- VIRLAN Foreign Language Virtual Environment for primary school children
- Rapid Development of Mission-Oriented Communication Skills DARPA Tactical Language Training Project
- Zengo Sayu Japanese VR environment
- Chatbots good annotated list
- Simon Laven Page on Chatterbots
- Bot-Liste German chatterbots

Field Trips, Real and Virtual

- Take a Field Trip for language learning
- Scavenger Hunts in a variety of areas (mostly for primary school use)
- Distance Learning/Virtual Field Trips
- An OOPS Virtual Field Trips Page!
- Tramline software for doing virtual field trips
- VolcanoWorld sample virtual field trips
- Local Governments Deploy Wide-Area Wi-Fi Networks article in ComputerWorld
- What Comes after Wi-Fi new wireless standards
- 3GPP third generation cellular
- Fraunhofer FIT - RAFT Remotely Accessible Field Trips
- Raft Project more information and sample field trips