Web-Based Instruction (for Teaching/Learning English) Evaluation

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Abstract

With the ever increasing significance of the Internet and the World Wide Web in the present Age of Information Technology and Communication taken into account, the author of this paper discusses the evaluation of web-based instruction (WBI) for teaching and learning of English. He also proposes a WBI Evaluation Form which can be of great use for English teachers who are considering venturing into the computerized world of language teaching.

Introduction

At present, we are in the Information Technology and Communication Age. Knowledge is now transmitted and received worldwide via the Internet and the World Wide Web. Generally speaking, the information on the World Wide Web is rich, inexpensive, and mostly written in English by all kinds of writers. Based on a recent survey, it was found that 30% of all 1,043 million Internet users around the world, approximately 313 million, use English as their medium. English is the first of the top ten languages used in the Web (Internet World States, 2006). Thus, the Internet seems to be a perfect source of information for teaching and learning English. Besides, it is very easy to make a web site nowadays. Anyone can publish anything on the web. Web resources rarely have editors or fact-checkers, and there is no web standard existing to ensure accuracy. For these reasons, it is necessary to

establish   some   criteria   for   evaluating   a   web   site   for teaching/learning purposes.

Since there are many topics related to the title, the author would like to limit this paper to a discussion about evaluation of web-based instruction (WBI) for teaching and learning English within six main areas as follows:

1.   Definitions of web-based instruction
2.   The importance of WBI in education
3.   The importance of WBI for teaching/learning English
4.   A new philosophy in teaching
5.   Differences between Objectivism and Constructivism
6.   How to evaluate WBI based on new and old teaching philosophies

What is web-based instruction (WBI)?

At present, many definitions of WBI are widely used in the field of educational technology. For example, Khan (1997) defines it as " ... a hypermedia-based instructional program which utilizes the attributes and resources of the World Wide Web to create a meaningful learning environment where learning is fostered and supported." Relan and Gillami (1997, cited in Henke, 1997) define it as "... the application of a repertoire of cognitively oriented instructional strategies within a constructivist and collaborative learning environment, utilizing the attributes and resources of the World Wide Web." Sometimes it is called Web-Based Training (WBT) which can be defined as "Individualized instruction delivered over public or private computer networks and displayed by a Web browser" (Clark, 1996).

Therefore, based on the above definitions, it is clearly seen that they are not identical because of different underlying teaching philosophies. The first one has some elements of Behavioral Psychology, while the last two seem to have evolved out of Cognitive Psychology. However, there is a common theme, which is that WBI takes advantage of the Internet and World Wide Web to deliver information.

The importance of WBI in education

As mentioned earlier, we are now in the Age of Information Technology and Communication and knowledge in various forms is transmitted and received worldwide via the Internet and the World Wide Web. There are many reasons why this has an important impact on education. Here are some of them (Rosenburg, 2006; Driscoll and Carliner, 2005; Ghaoui, 2004; Burge and Haughey, 2001):

1. It is an inexpensive, reliable, and very rich source of information.
2. Based on philosophical concepts of Constructivism, it is an ideal source of information for an effective personalized, learning environment.
3. It is more economical than many other means of teaching such as computer-based instruction, live broadcasts, video tapes, and so on.
4. It enables learners who prefer to learn outside traditional classrooms to attend classes at their homes or offices.
5. It provides delivery medium, content provider, and subject matter in one package.
6. Learners can access WBI at anytime, from anywhere (that has a telephone line) to suit best their individual needs and learning styles.
7. Learners can learn lessons from WBI synchronously and asynchronously.
8. It makes "Distance Learning" (when the teacher and students are separated by distance and/or time) easier to handle.
9. It is a part of the rapid growth of the Internet and therefore is a rapidly expanding source of information and means of communication.

In addition, there are still more advantages of WBI for teaching purposes as listed by Curzon (2003):

1. To impart new knowledge or skill to people of all ages to develop the necessary skills to seek, evaluate, manage, and create information nationwide and worldwide.

2. To maximize limited resources from an institute or an instructor to a very large number of a target audience in a short time span without concerns about limitations of classroom space.

3. To support distance learning initiatives that some institutes have already given to the community, to a much wider scope especially to some remote areas.

4. To transform some kinds of curriculum connections such as library instruction, information literacy, research skills, or even use of some specific resources to target audience.

5. To encourage learners to have independence learning and learner-centered learning which will be important for younger generations in the future.

A successful web-based instruction project begins with successful planning. Three of the key components of such planning are scope, timeline, and budget. They are vital and must be managed effectively throughout the project to make the final product fruitful; otherwise, WBI may fail unexpectedly (Curzon, 2003). In addition, at present, we are in the third generation of "distance education" (Peters, 2001) and computer-mediated communication. With the help of computers and the Internet like WBI, distance education can even have greater flexibility and an enormous potential for change. It especially makes autonomous distance education and autonomous learning possible. This model requires learners to plan, organize, and implement learning activities by themselves, while the university or an institute remains in the background to provide only advice, support, counseling, and grades to the learners.

The importance of WBI for teaching/learning English

Next comes the importance of WBI for teaching/learning English in a country like Thailand that uses English as a foreign language. The author thinks that it is beneficial for the followings reasons:

1. It is an inexpensive but very fruitful way to solve the problem of a lack of qualified teachers of English for teaching all language skills.

2. It is very economical but contains very rich sources of information and teaching materials for teachers of English.

3. It provides plenty of reliable and up-to-date sources of information for all ages.

4. Many WBI sites offer teaching tips, techniques, and teaching materials to teachers of English for free.

5. Plenty of WBI sites for teaching and learning English purposes allow teachers and students to access their webs for free.

However, despite of the aforementioned advantages of WBI, teachers and students should be careful about some of the information obtained from the web. Teachers of English especially have to be even more careful as now anyone can publish anything on the web using different varieties of English. Some may not use "good or standard" English on their web sites. Normally, web resources rarely have editors or fact-checkers. Besides, there is no web standard existing to ensure accuracy. Therefore, we should have some criteria to evaluate a web used site for teaching/learning purposes.

New philosophy in teaching

In the past, most teaching and learning approaches, techniques, and methods were based on Objectivism, where students were presented with information that they repeated back to teachers. The underlying models for Objectivism are from Behavioral Psychology, which believes that human behaviors can be modified by consequences (rewards and punishments). This idea branched out into a number of teaching models; for instance, the Structural Method, Aural-Oral Approaches, the Direct Method, and the Grammar-Translation Method. The current trend in teaching is Constructivism, which has evolved out of Cognitive Psychology.

Under this belief, students are viewed as active information processors. This new idea has also branched into a number of teaching models such as Active Learning, Total Response Learning, Collaborative Learning and Self-directed Learning, Cognitive Learning and Meta-cognitive Learning. Most new WBIs have begun to use the virtues of Constructivism and attack Objectivism.

Differences between Objectivism and Constructivism

To understand some criteria for evaluating WBI for teaching/learning English better, the readers should understand some of the differences between Objectivism and Constructivism as provided in the table below. Moreover, they should know some key cognitive learning strategies (Koyanaki, 2003).

Differences between Objectivism and Constructivism

Behavioral Psychology/Objectivism	Cognitive Psychology/Constructivism
▢ Learning is based on observable behavior. ▢ Behavior is determined by outcomes/consequences. ▢ Knowledge is manifested in behavior (correct answers). **Teaching Method:** ▢ Content is presented. ▢ Question is put to students. ▢ Give positive reinforcement for right answers. ▢ Cycle is repeated for wrong answers. ▢ Truth and knowledge exists for learners to memorize. ▢ Teacher controls learning process. ▢ Students learn meanings.	▢ Learner is an active processor of information (computer-based model). ▢ Emphases are placed on human beings' internal mental states (the "black box"). ▢ Perspective and knowledge of students are considered. **Methods vary:** ▢ Encourage knowledge formation. ▢ Process is different for each student. ▢ Emphasize self-directed exploration, discovery learning, and construction of concepts, schema, and mental models. ▢ Truth and knowledge is constructed by learners based on perspective and experience. ▢ Teacher observes, coaches, and facilitates. ▢ Students create meaning.

In addition, Constructivism emphasizes a rich learning environment, and constructivists feel that students should be able to explore an information space independently to obtain content, high level concepts, and even learn how to learn. Teachers should provide multiple paths for students to explore and they should work as guides. This is an ideal concept for web-based instruction.

Key Cognitive Learning Strategies

Schank and Cleary (1995 cited by Campbell, 2003) have developed a model called "teaching architecture" that is based on Constructivism. It is relevant to computer-based instruction. The framework of the model is as follows:

1. Simulation-based Learning by Doing

It is believed that humans learn by doing. Therefore, when learning a new skill like a language, the learners would need practice with the actual skill, accompanied by coaching, advice, and correction by a teacher or WBI. The nature of simulations requires active engagement by the learner who may sometimes have to be in "a simulated world" as an actual participant.

2. Incidental Learning

In real life, a lot of things to be learned like facts and figures are not interesting, but by engaging in fun tasks they can be learned naturally. Thus, imparting dull or rote information should be put in the context of an interesting task or experience.

3. Learning by Reflection

Sometimes the learners should ask themselves critical questions about their own learning and ask someone to analyze the problems. They then should find ways to continue in their progress. Ideally, interaction with a coach or expert is desirable and self-assessment is expected.

4. Case-based Learning

In the strategy, the learner is expected to face difficulties or make errors or experience failures, then new information is imparted as the task unfolds. The learner could benefit from the presence of an expert, a teacher or a good WBI who can tell stories about their own experience. This is sometimes called "Just-in-time Learning" and it works best when the experts have a large data base of cases typically in the form of stories.

5. Learning by Exploring

When learners are involved in a new task, they naturally generate questions. These questions should be answered optimally as they arise, either virtually or with face-to-face interaction.

In addition, Bruner (1986, cited in Campbell, 2003), who is largely credited with the emergence of Constructivism, gives three main principles of learning from a design point of view as follows:

1. The instruction should be concerned with the experience, convictions, and constructions that learners already possess,

2. The instruction should be structured so that it can be easily understood and modified by the learner, and

3. The instruction should be designed to facilitate exploration, extrapolation, and elaboration of the learner.

Furthermore, Cognitivism also plays a major role in teaching and learning these days. Unlike Behaviorism which focuses on the learners' external behavior, it focuses on their internal cognitive processes. They are seen as more active in Cognitivism such as actively processing information and finding ways to create new knowledge based on their previous knowledge. Consequently, learning styles are key words for Cognitivism, and there are many kinds of them, for example, visual, auditory, and kinesthetic learning styles, social learning styles, concrete, abstract, sequential and random learning style, and learning style inventory (Dewald, 2003). Since different learners perceive and process information

differently, their learning styles are different and online teaching materials should incorporate various types of media to suit them most.

Therefore, in order to evaluate a web-based instruction program especially designed for teaching and learning English, an evaluator should take the concepts and principles of Constructivism and Cognitivism mentioned above into consideration.

How to evaluate WBI based on new and old teaching philosophies

There are many criteria for evaluating a web site. This depends mainly on the purposes of the evaluators and sources of information. There is no standard set. However, based on a number of related sources and direct experiences as a user and web constructor, the author would like to propose a set of criteria called COCAA-INC-PRUC for evaluating WBI for teaching/learning English as follows (Davidson-Shivers & Rasmussen, 2006; Magoulas & Chene, 2006; Smith, 2003; OHU, 2003; Engle, 2003; USA, 2002; VU, 2002; Sangaram, 2543; Kapoun, 1998; Kenke, 1997):

WBI Evaluation Form

COCAA-INC-PRUC Criteria

Instruction:

Use the following criteria to evaluate a web site for teaching/ learning English by making an X in an appropriate space after each question.

*Name of the web site :*_____

URL Address : _____

Criteria	yes	no
1. Connectivity and Initial Impression (w = 4)		
1. Is the web easy to access?		
2. Is the URL easy to type and not too long?		
3. Does the site have a reputable source?		

Criteria	yes	no
4. Does the host server appear to be stable?		
5. Are the colors and fonts used consistent and easy to read?		
2. Objectives and Value (w = 5)		
1. Is the site built especially for teaching and learning English?		
2. Is the prerequisite of the course clearly stated?		
3. Does the site provide the kind of information that you need?		
3. Content and Learning Activities (w = 5)		
1. Is the target audience clearly stated?		
2. Does each page consist of the right amount of text?		
3. Are the texts presented in a similar format to that of a newspaper?		
4. Are additional resource links included?		
5. Does it have sufficient exercises and will likely be revisited?		
6. Does it have an effective research engine?		
7. Does it have a search engine to find the meanings of a new word?		
8. Are the majority of the exercises based on Constructivism?		
9. Does it include multimedia, e.g. sound, movie, and pictures?		
4. Accuracy (w = 4)		
1. Is the information reliable and mostly error-free?		
2. Is the text well written?		
3. Is there an editor who verifies the information?		
5. Authority (w = 3)		
1. Is there a qualified author?		
2. Is there a link to information about the author or the sponsor?		
3. If it is run by a sponsor, is it reputable?		
4. Is the site on an .edu, .gov, or .ac sponsored server?		
6. Interactivity (w = 3)		
1. Does it provide student-to-course content relationship?		
2. Does it provide student-to-teacher relationship?		
3. Does it also provide student-to-student relationship?		
4. Does it have a means of tracking the student?		
5. Does it have a system to evaluate the student's performance?		
6. Is there a Question/Answer Guide?		
7. Is there contact information to the web master?		
8. Is there media for communication (e.g. e-mail & chat-room)		

Criteria	yes	no
9. Do the forms provided work?		
10. Are colors, fonts, "flashes," and animations used to orient rather than entertain the users?		
7. Navigability (w = 2)		
1. Does it use hyperlinks within the "learning environment"?		
2. Are the hyperlinks appropriately labeled?		
3. Are colors and styles consistently used in links?		
4. Does it offer externally-linked sites in a separate section?		
5. Is the main menu designed in a "spoke and hub" pattern?		
6. Can you easily get back to "home"?		
7. Does it provide scrolls that are not too long? (about 3 pages)		
8. Does it use multimedia data (graphic, pictures, maps & chart)?		
8. Currency (w = 1)		
1. Is the web frequently updated?		
2. Are the dates of update stated?		
9. Popularity (w = 1)		
1. Can the web be linked from different sources?		
2. Are there a lot of visitors to the web (based on its visiting counter)?		
3. Is its content available in many forms?		
10. Reviews and Users (w = 1)		
1. Do reviewing services say something good about the web?		
2. Do your students like this web?		
3. Do your colleagues like the web?		
11. User Friendliness and Workability (w = 2)		
1. Can the information be saved easily and quickly?		
2. Can the information be directly printed?		
3. Is help information available?		
4. Can it be used conveniently with no extra-hardware or software?		
12. Cost (w = 4)		
1. Is the cost of subscribing reasonable, if not free?		
2. If online transaction is to be used, does it seem safe enough?		

Comments:

How to score and interpret the finding

1. For any question checked "Yes," it is worth 1.0, while "No" is 0.0.
2. Sum up the score for each criterion (heading).
3. Divide the total score of each criterion by the number of questions.
4. Multiply the figure in step 3 with the weight of importance of each criterion as follows: COCAA-INC-PRUC : 4-5-5-4-3-3-2-1-1-1-2-4.
5. Sum up the figures from step 4 and compare it with the evaluation bands as follows:
   a. 0 – 9 　= Very poor
   b. 10 – 19 = Fair
   c. 20 – 29 = Good
   d. 30 – 35 = Very good

Conclusion

Now, as for the interpretation of the findings, we should not simply sum up the number of Xs in each column because each question and dimension bears different weights of importance. As a teacher of English, you are suggested to put more emphases on dimensions 2, 3, 4, and 5 (Objectives and Value, Content and Learning Activities, Accuracy, and Authority). Generally speaking, the criteria in the table should be used best as a web site portfolio with more emphases on the four dimensions mentioned above, especially dimension 2. This is the essence of WBI for teaching/learning English.

The Author

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