

Using Educational Digital Library to Enhance Inquiry-Based Language Learning

Hsin-Lin Lu, Assistant Professor
Department of English Language and Literature
Fu Jen Catholic University, Taiwan
E-mail: hsinlinlu@gmail.com

Cooper Singman, Assistant Professor
Department of Applied Foreign Languages
Tatung University, Taiwan
E-mail: cooper@ttu.edu.tw

Abstract

This study investigated the value of an organized educational digital library in supporting and enhancing EFL students' inquiry learning process. Digital libraries are complex and advanced distributed information spaces that offer real-time interactive services enabling public to easily manage and monitor vast quantities of multimedia data via the Internet (Ferguson & Bunge, 1997). Students in two groups were compared in their learning performance. One approach used traditional open access to information while the other used an online digital library to accessing information during their inquiry-based information search process. Inquiry-based learning is the process of feeling curious about a topic, asking questions, and seeking answers, language learners can clarify their understanding of the content and develop their language skills simultaneously (Stoddart, Pinal, Latzke, & Canaday, 2002). Quantitative data analysis was used to examine the two groups on their English reading comprehension. Results indicated students who used structured search strategies with digital libraries had higher learning performance in English reading comprehension.

Keywords: educational digital library; inquiry-based learning; EFL; English reading comprehension

Introduction

During the last three decades, computer-assisted language learning (CALL) has represented an alternative approach for EFL learners and instructors on maintaining students' interest in languages. However, while teachers and students benefit from an abundance of online resources, they are faced with the challenge of discovering the most useful content. Even the most popular search engines like Google and Yahoo return an overwhelming amount of results that are not targeted at solving the problem at hand. Foreign language learners are especially challenged when it comes to deciding which content is the most accurate, truthful or authentic and which content is most appropriate to solving their problems. Searches within digital libraries, often provide more authoritative, organized and authentic materials than open access web searches and they can play a crucial role in the quality of the student's inquiry and value of the education (Chen & Chen, 2010).

Literature Review

As online resources are widely used to advance language education recently, questions arise concerning the critical disadvantages of Internet while utilizing Internet as a teaching tool to support language learning. This study argues that educational digital libraries are more controlled and structured environments can be a valuable technological tool to support and improve EFL student's English language skills.

Applying the earlier information

seeking theories to the digital libraries experience, Carol Kuhlthau (2010) created the inquiry-based information search process (ISP) model. The ISP provides insight into how to guide students in the inquiry process by involving identification of a topic and organizing information into a coherent structure in the digital library environment. Through purposeful searching and browsing of a particular subject, digital libraries can facilitate and tailor the special needs of language learners (Wu & Witten, 2007). In this way, important skills of critical thinking, problem solving, and creative thinking can be taught and developed along with improving their English language skills in the process of extensive reading, evaluating content of texts, selecting relevant information, and synthesizing materials in the educational digital library environment.

Although a growing body of research highlights the beneficial role of educational digital libraries in variety fields, little is known about the effectiveness of an organized educational digital library in supporting and improving inquiry-based language learning. Instead of simply viewed as another source of information for students, digital libraries should viewed as resources to guide students to confront the mass of online resources and avoid being overwhelmed by it. Digital libraries can make a significant contribution if they can provide new opportunities for students to engage in manipulating target language information and transforming it into

meaningful ways of critical and creative thinking (Bush & Terry, 1997).

Research Methods

This study provides an alternative model for how to integrate technology with the learning process to engage EFL students to learn more meaningfully. This study would try to answer the following research questions:

1. Is there any difference on the English reading comprehension scores between the Digital Library group and the Open Access group after controlling for pre-intervention achievement levels?

2. Is there any difference in EFL students' learning attitudes between the Digital Library group and the Open Access group?

Two existing classes were recruited as subjects. The pretest of English reading comprehension was administered to both classes to evaluate the students' pre-intervention achievement levels. During the intervention period, students in two groups were given different approaches to cultivate inquiry process.

Both of the Digital Library group and the Open Access group were presented with the same units and received the same assignments. Lastly, both groups participated in post-intervention English reading comprehension tests that took place at the end of semester as well as completed a survey measuring their attitude toward their respective learning activity.

Results and discussion

The result showed that there was a significant difference on the post-scores between two groups after controlled for the difference of pretest. Therefore, we conclude that digital library activities enhance students' English reading comprehension abilities. This statistical finding was supported by other researchers such as Wu and Witten (2007), Marchionini & Maurer (1995), and Fitzgerald (2007) who identified many advantages in using digital libraries for language teaching and learning.

The results also showed that students in the Digital Library group on the average had better learning attitude toward the intervention training program than did the Open Access group. The results in this aspect of the study are consistent with the findings of many other studies (Recker et al 2005; Thong, Hong and Tam, 2004). They support the effect that exposure to the digital library can change a user's attitude for the better. In general, researchers have revealed participants were very positive and enthusiastic about the value and the quality of the discovered learning resources of digital libraries. It can be reasoned that using digital libraries was easier in terms of obtaining relevant information and understanding the materials. Therefore, it is a natural next step for students to reflect the concepts or ideas that they learned from their reading activities, which in turn, made the learning meaningful and enhanced the students' learning with more positive attitude.

Implications and Conclusion

A well-designed and organized digital library can benefit inquiry learning process more than unstructured distributed resources. It is more difficult for learners to follow the constructive process of inquiry supported by unorganized resources to have the experience of extensive exploration of ideas and formulation of thoughts before developing their own deep understanding of the topics and presenting it. In contrast, when learners used organized digital resources stored in digital libraries for learning, the effectiveness of the inquiry process was increased by avoiding learning disorientation and cognitive loading.

We argue that online digital libraries resources have the advantage of being a basis for inquiry-based language learning and therefore facilitate English reading comprehension. EFL educators should adopt training strategies that engage learners in every stage of inquiry process, from identifying a topic and selecting what to investigate, to formulating a focused perspective and presenting their final product.

This study points out the challenge that educators and students face with while utilizing Internet as a teaching tool to support inquiry-based learning. In the practical perspective, the findings of this study provide an alternative model for how to integrate digital libraries into learning and teaching process.

For further research of this study, the researcher suggests enhancing the model of inquired ISP by imposing the

stage of Validation between the stages of Collection, and Presentation. As more and more people rely on Internet information despite evidence that it is potentially inaccurate and biased, a process to consider the credibility of web-based information is needed.

References

- Bush, M. D., & Terry, R. M. (1997). *Technology-enhanced language learning*: National Textbook Company.
- Chen C. M. & Chen C. C., (2010). Problem-based learning supported by digital archives: Case study of Taiwan Libraries History Digital Library. *The Electronic Library*, 28 (1), 5-28.
- Ferguson, C. D. & Bunge, C. A. (1997). The shape of services to come: value-based reference service for the largely digital library. *College Research Libraries*, 58(3), 253-255.
- Fitzgerald, A. (2007). Application for digital libraries in language learning and the professional development of teachers. *ECDL 2007*, 579-582
- Kuhlthau, C. C. (2010). *Guided inquiry: School libraries in the 21st century*. *School Libraries Worldwide*, 16(1), 1-12.
- Marchionini, G. and Maurer, H. (1995). The roles of digital libraries in teaching and learning. *Communications of the ACM*, 38(4), 67-75.
- Recker, M., Dorward, J., Dawson, D., Halioris, S., Liu, Y., Mao, X., et al. (2005). You can lead a horse to water: teacher development and use of digital library resources. Paper presented at the Proceedings of the 5th ACM/IEEE-CS