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Extensive reading online: an overview and evaluation

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Abstract This study reports on the design and implementation of a reading program — Extensive Reading Online (ERO) — that aims to offer an online reading platform featuring specific needs for EFL learners in Taiwan. The system includes both teacher and student interfaces. Several reading aids are integrated into the system, such as concordancer help, stage-by-stage reading strategy training, and text annotation functions. ERO was integrated into a college level reading class. Results show that students held a positive attitude toward the reading system. Some recommendations for future improvement are also discussed.

Keywords: Concordancer; Extensive reading; English; ESL; Reading strategies; Undergraduate; World-wide web

Introduction

Reading instruction in the field of English as a Second Language (ESL) or English as a Foreign Language (EFL) has been well studied over the past few decades. Research has focused not only on examining the effect of teaching approaches in the classroom but also on how to engage learners in reading an abundance of texts. Studies have shown that extensive reading is the key to achieving higher reading proficiency (Krashen, 1993; Green & Oxford, 1995). Krashen (1993) has even suggested that free voluntary reading (FVR) is the key to student improvement in reading skills, linguistic competence, vocabulary, spelling, and writing. According to Hayashi (1999), extensive reading provides learners with rich background knowledge, vocabulary recognition skills, and higher motivation for more reading. In addition, it can also lead to the development of rapid reading skills, and the discovery of reading strategies. Even though extensive reading can offer so many advantages for language learners, how to manage the learning process and the product of extensive learning has become a big challenge for both learners and teachers. Readers, who want to learn from authentic online material, first have to tackle a huge number of reading files. During the reading process, if they want to jot down new vocabulary or sentence patterns, they need to carry a notebook with them to record new words or phrases. They even have to copy complete sentences in order to learn vocabulary in context. The above-mentioned reading strategies are all very laborious and might eventually decrease the learner's interest in further reading. Besides, with class sizes often more than 50, it becomes a big challenge for

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EFL teachers in Taiwan to integrate an extensive reading project in their classes due to the difficulty of keeping track of each learner's progress over time and managing large class learning records. The current study concerns the introduction an experimental web-based system — Extensive Reading Online (ERO) — with the aim of providing more user-friendly assistance for the online reading process. The project had two major goals. The first was to design and implement an online reading lab providing several features to support ESL/EFL learners/teachers when they read/teach online. The second goal was to assess the learners' perspective on the effectiveness of the system.

System development

ERO combines an extensive reading and language experience that exposes learners to limitless, authentic reading contexts and fosters learner autonomy and long-term reading interest. From the cognitive perspective, the system provides learners with large exposure to different language usage (different topics, styles of writing, genres, levels of difficulty). By extensive practising, it also enhances learners' metacognitive skills by providing opportunities to practice the use of different language skills. In terms of social interaction, the system provides a forum for learners to share their views and write their reflections on others' posted articles. As for affective perspective, the system encourages students to learn independently, to take control of the materials, and to read materials that are relevant to their needs and interests., ERO includes both student and teacher interfaces. It has the following major functions: (1) Profile Management (2) Reading Forum (3) Online text annotation (4) Automatic Test Generator (5) Reading Strategy Training, and (6) Learning Record. The following sections highlight some salient features in the design of the ERO system.

Profile management

Profile management includes the following three subfunctions:

- Personal Account Management: Students can change details within their personal profile such as login name, password, email address, and phone number;
- System Reminder: This includes login times, reminders from the instructor, and randomly selected tips on some frequently asked questions;
- Personal Record: This shows a user's progress over time such as the number of articles posted, reflections written, words annotated, and a total count of words written.

Reading forum

This is the main forum where students interact and collaborate with each other in their extensive reading endeavours. It includes mainly the following two sub-areas:

- Article Posting: In this section, a table listing all the posted reading articles allows learners to choose from a variety of reading topics that interest them (see Fig. 1). Since the database will increase dramatically over time with one class of students (around 60) registered in the system, there are a variety of sorting options to help students locate efficiently the information they need. Articles can be displayed by week, ID number, last updated time, 'burning topic' (popularity of the articles), word count, category of the title, student's name, keyword in the article, or number of annotated words.

To ensure the students' proper use of the reading materials online, they are provided with reference material listing websites offering reading materials without fear of copyright infringement. In addition, the system requires users to key in the source and URL of the reading article chosen.

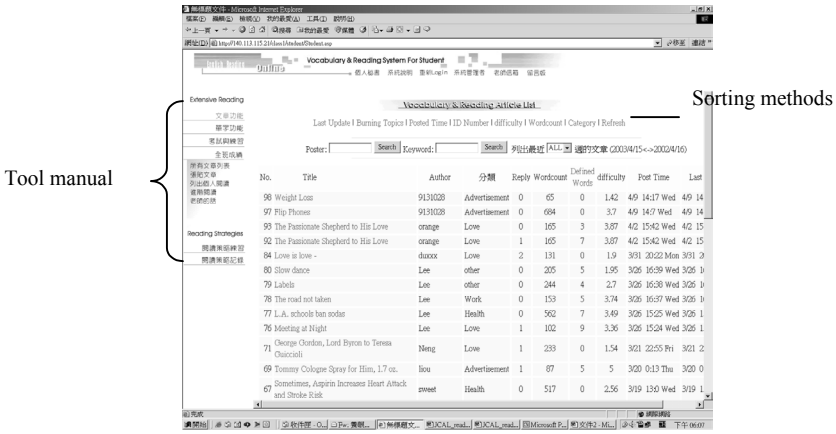

Fig. 1. Screenshot of the Reading Forum

- Reflection Writing: After reading the article, learners are encouraged to write down comments or reflections on the article and share their opinions with peers on the system.

Online text annotation

Fraser (1999) has indicated that contextual inference and dictionary look-up support more lexical acquisition when used together than they do when used independently of each other. The sequence of these strategies also influences their effectiveness. That is, attempted inference should precede dictionary confirmation. This theory is also adopted in the design of the reading program reported in this paper. The following paragraphs introduce how a variety of features for annotation and lexical assistance were integrated to aid learners in the reading process.

Concordancer and online dictionary. Research has shown that readers tend to face more difficulty in inferring the meaning of new words from context when they read authentic texts (Laufer & Sim, 1985; Haynes, 1983; Huckin *et al*., 1991). Cobb (1997; 1999) has further indicated that the capability of contextual inference could be substantially enhanced by providing multiple contexts for a given word with the aid of a computer system — a concordancer. These concordances (language examples sorted by a concordancer) are likely to have the combination of linguistic and semantic support that could help learners build up a stable initial representation for a new word (Cobb, 1999). Other than the potential benefits of assisting contextual inference, concordance can boost the number of encounters with new and old words on the learner's part. This is believed to be beneficial in the acquisition of vocabulary (Cobb, 1997; Zahar *et al.*, 2001).

In ERO, if readers require further contextualisation to work out the meaning of a word, they can click for wider contexts where the keyword occurs (see Fig. 2). Furthermore, in order to reduce reading difficulty resulting from such an abundance of linguistic resources, the system provides the option of sorting concordances by difficulty. That is to say, lexically easy sentences are listed first, and difficult ones

later. This method is expected to steepen the learning curve, especially for those learners who have a limited vocabulary.

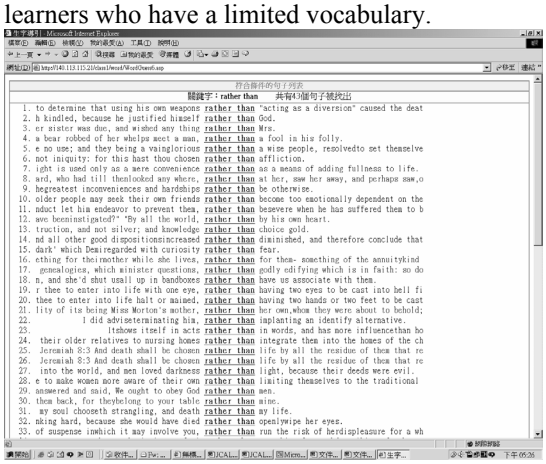

Fig. 2. Screenshot on concordance output

The following paragraphs illustrate how the concordancer is integrated with text annotation in ERO.

Text annotation. One of the most salient features of the Internet is that it allows users to store information online in hypertext format, with clean layout and easy retrieval. Three levels of text annotation were developed: word annotation, phrase annotation, and Q & A annotation. By clicking on the word that needs to be annotated, the system will automatically provide a list of concordance examples, modelling the annotated word. This allows readers to infer the word's meaning from wider contexts. If this help is not sufficient, readers can click on the *search dictionary* button and the system will yield a list of dictionary definitions for the selected word. When a word has been annotated, it will turn a different colour, and by placing a cursor on it, a box will pop up with its annotated content. Students can revise, delete, and add to the annotated words. When a word or a phrase has multiple annotation entries, the system will notify the instructor automatically so that the instructor can intervene in the discussion.

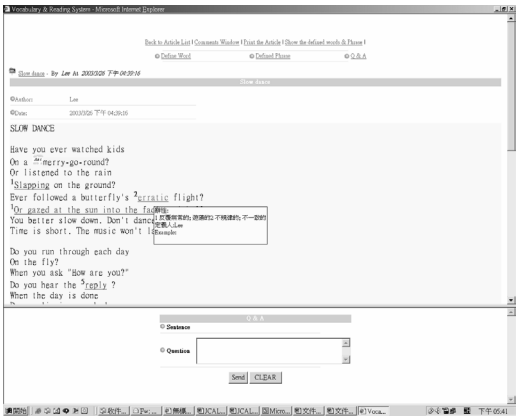

Fig. 3. Online text annotation

As to Q & A annotation, ERO allows readers to highlight problem-atic parts of the text. Then, by clicking on the Q & A button, a frame at the bottom the screen allows readers to post their questions (see Fig. 3). To respond to the question, users can click on the Q & A icon next to the highlighted sentence and a screen at the bottom allows them to write down their comments. Just by placing the cursor on the highlighted sentence, a dialogue box will appear with all its annotated questions and answers.

Personal vocabulary notebook. During the reading process, readers usually find it handy to keep a notebook with them to jot down new words or information for later reference. In this online reading lab, a neater, richer, more efficient and user-friendly tool is provided which readers can use to record new words, definitions, or concordance examples that they wish to keep simply by clicking on the word. Then, the system will pop up a dialog box allowing them to key in grammatical properties,

Chinese/English meanings, and concordance examples. The system will automatically assemble an individualised glossary or lexicon into a user's personal profile with reference to the source article for the word. *Edit* and *Delete* functions are provided for later modification

Automatic test generator

In order to measure learners' learning progress, an automatic test generator was developed to help learners check their vocabulary acquisition. It can be used on either the learner's or the teacher's initiative. For learner initiative, learners can use the test generator to check their comprehension and vocabulary by attending a self-programmed test. The system will compile each individual learner's past reading profiles and generate a series of cloze test items. After filling in the answers and clicking on the 'submit' button, the results are returned to the student automatically. For teacher-led tests, teachers can designate the test date (or range of dates), testees, test types, and announcement messages on the system. Since each individual student reads different articles, the content of the system-generated test will vary from one person to another. One advantage of the teacher initiative test interface is that it allows teachers to hold an onsite test for all students at the same time so that he/she does not have to be too concerned with test management issues, such as cheating online.

Reading strategy training

Research has shown that the use of reading strategies is crucial for effective reading. How to train readers to become familiarised with a variety of reading stages and strategies has become a big challenge for classroom teachers, especially in those cases where large class sizes are prevalent and class time is limited. Within the teacher interface, an online programmed reading strategy training is provided that allows teachers to post reading articles, reading prompts, comprehension questions, and a sequence of reading activities from the pre-reading, reading, to post-reading phases. The goal is to expose students to a variety of reading strategies through completion of the tasks. Figure 4 illustrates the reading process in the system. The following paragraphs will discuss how each stage of the activity works.

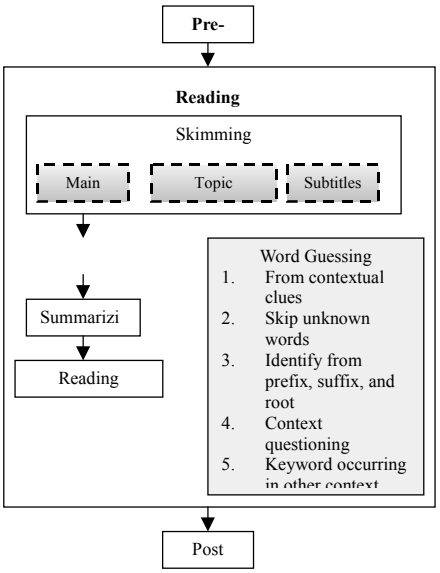

Fig. 4. Flowchart of the reading process

Pre-reading Stage. The ERO system provides a word-matching activity to stimulate reader prediction of the content based on the topic of the article. The system will first display the title of the article, and then have learners write down three keywords that might appear in the article. The system will then calculate the accuracy rate of prediction and lead learners onto the skimming stage.

Reading stage

- Skimming for gist. The system employs three different approaches to enhance learners' skimming skills. First, to enhance reading speed, a small screen on the top-left corner will display a clock counting down from 60 to 0 seconds. Readers have to skim through the page fast enough to get the main gist of the article before the time is up. Then, a column will pop up for readers to write down the main idea. The second approach is to skim through topic sentences. On the teacher interface, teachers can annotate topic sentences for each paragraph. All the annotated topic sentences will be highlighted in different colors and the rest of the sentences will be crossed out so readers can practice reading between the lines. The third approach is to skim from subtitles.
- Cultivating vocabulary. The system offers seven different prompts to encourage learners to use different types of word guessing strategies, such as making contextual guesses about the meanings of the unknown words, see Word Guessing Table in Figure (4). The prompts are presented in random order so different learners reading different articles will receive different word guessing prompts.
- Summarising. After scanning, readers are expected to write down their summary online and send it out for the teacher's evaluation.
- Reading Comprehension. To measure learners' reading comprehension, a user-friendly test generator mode was developed that allows teachers to create four different formats of test: multiple choice, true-false, fill-in-the-blank and essay questions.

Post-reading stage. As a post-reading activity, students are expected to write down their opinions and critical analyses of the main ideas online and share them with the classroom teacher and their peers. This stage serves as a wrap up for the whole reading process.

Student record database

As already mentioned above, classes of more than 50 students are very common in Taiwan, so managing the learners' online behaviour and progress becomes a time-consuming task, and even a 'mission-impossible'. Fortunately, with the help of computers and the Internet, the task has become easy, adaptive and timesaving. Figure 5 illustrates the student record list of progress over time. To make data sorting more efficient, there are 11 different sorting options at the top of the screen. While recording learners' weekly assignments, the teacher can either sort by student ID number or by number of reading assignments completed. In addition, an automatic email reminder system was developed to remind students of their missing homework through weekly email if necessary.

Fig. 5. Screenshot of the student record

Another system management function on the teacher interface is the schedule of submission deadlines and number of submissions.

Program implementation and evaluation

The above-mentioned Extensive Reading Online system was implemented in one required college level reading course for freshmen. In order to help students find suitable reading materials that were extensive but not excessive in length, it was recommended that each article posted on the ERO system should be shorter than 500 words. Of 59 students on the course, a total of 2533 reading articles, 1770 reflection entries, and 2852 annotated words were submitted over the course of one semester. This represents an average of nearly 43 postings, 30 reflections, and 48 annotated words per student.

The assessment was based on student evaluation. It was important to find out whether students thought that the reading system was effective and enjoyable. A 44-item 5-Point-Likert Scale questionnaire was developed. The students completed the survey at the end of the semester. The questionnaire included the following four categories: system interface design; features fostering language learning; perceived progress and learner motivation.

Table 1. Descriptive analysis of questionnaire data

Category	mean	*s.d.*	*n*
System interface design	3.24	0.57	59
Features fostering language learning	3.26	0.40	59
Perceived progress	3.43	0.62	59
Learner motivation	3.29	0.63	59

The mean and standard deviation for each category are presented in Table 1. As it shows, the mean for the four categories were all above average (over 3.0) which means that students had positive attitudes toward the reading system in general. Besides, among the four categories, the third category —Perceived progress — had the highest mean score. That is, students who used the reading system felt that they had made progress in English through using the system.

The mean and standard deviation for some items with higher mean scores are presented in Table 2.

Table 2. Descriptive statistics on survey items

Category	mean	*s.d.*
System interface design		
2. Clear guidance on the screen	3.76	0.86
10. User-friendliness	3.56	0.93
Features fostering language learning		
43. Word annotation	3.54	0.79
42. Management of personal profiles and progress	3.64	0.78
Perceived progress		
18. Enhancing the opportunities to read in English	3.98	0.75
19. Enhancing the ability of reading in English	3.85	0.83
20. Enhancing the ability of word recognition	3.58	0.81
Learner motivation		
31. Willingness to recommend the reading system to others	3.58	0.79
33. Being serious while reading and posting on the system	3.41	0.97

By using Pearson Product-Moment Correlations among the four categories, some insight into their relationships was gained . Firstly, analysis revealed a moderate correlation between the perceived progress from the reading system and student motivation toward ERO. ($r = 0.69$). That is, learners who reported having improved their reading proficiency a lot also tended to have a more

positive attitude toward using the reading system. Secondly, perceived progress and two other categories — system interface design and features fostering language learning also demonstrated significant correlations ($r = 0.38$ and 0.44, respectively). The results showed that those users who had a positive attitude toward the reading system also tended to have a positive perception in terms of mean scores for both system interface design and features fostering language learning. Thirdly, the motivation category showed significant correlation with the interface ($r = 0.42$) and language features categories ($r = 0.50$). That is, learners who had strong motivation in using ERO also tended to hold a positive attitude toward its interface design and language features.

Conclusion

A few conclusions can be gleaned from this preliminary evaluation of the program. The subjects in the study reported to have a positive attitude toward the ERO system and consider it effective in enhancing their language skills. Regarding suggestions for improvements, some new help functions could be added.

First, the current ERO system does not allow classroom teachers to open new courses online. Therefore, it would be very useful if the system can provide automatic course opening functions for different class levels and course purpose.

Second, instead of recording reflections in written form, the system could also provide learners with a way to express their opinion orally and save time recording online, so that learners might share their opinions and practice speaking skills at the same time.

Some students pointed out that the workload of reading assignments per week was too heavy for them even though the instructor had reduced the load to two-thirds of the original amount. As a classroom teacher, I observed that the loading of the reading course in this study was indeed much heavier than other courses of the same nature since students not only had to read their regular class textbook but also complete web-based further reading on a weekly basis.

Since the ERO system controls students' learning schedules, it is strict and inflexible, especially for those who either have lower reading skills or a procrastination problem. A teacher policy of offering more but being less involved in decisions regarding the volume of reading could be taken into consideration for the next implementation of the system. That is, students could be provided with more freedom in terms of the number of articles they want to read based on their motivation and needs. A learner portfolio could also be adopted in the system that allows learners to set up their reading plan for a whole semester and ERO will use learner-adapted check-points to help learners fulfil their learning goals. Another solution is to use ERO for bonus credit purposes for low achievers and highly motivated students, rather than requiring the whole class to complete the same amount of tasks. Furthermore, to reduce time constraints on the learners, the teacher can designate longer grace periods for assignments, for example, from a weekly schedule to a bi-weekly one.

Some students mentioned that they had difficulty figuring out how to write reflections on the article they had read. In the next version of the system, more guided reflection will be provided, such as step-by-step reflection writing hints. Furthermore, learners will also be encouraged to ask questions implied by the articles and invite others to comment on them.

The system has been integrated into both English and non-English major reading courses so far and teachers have found that there are significant differences in these learners' attitudes toward the system. English major learners tend to perform better than non-English major students and find the system useful and enjoyable. They are also more active in participating in ERO, for example annotating more vocabulary, writing longer reflections, and being more attentive to the deadline of weekly assignments. Therefore, in the future application of ERO, it will be open for public use on the Internet and invite those who are motivated to read and share to learn cooperatively online. One benefit observed from the study is that since students have to search reading materials constantly on the Internet, their Internet literacy has improved and they have become more resourceful in finding suitable reading materials. These are all important for the enhancement of learner autonomy, independence, and long-term reading interest.

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