Using a Small Network to Teach IT Skills to ESP Graduate Students

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ABSTRACT

To be considered literate in the information age, students must develop functional, academic, and computer skills. On the basis of a needs assessment, a computer literacy questionnaire and an English proficiency test, an ESP course was designed for graduate students majoring in art education. Since the students had no access to a computer lab or internet, a small computer network was built in the classroom. The study describes how the small computer network was installed and configured, what internet searching skills were integrated in the ESP course, what training and assessment methods were used, in addition to students' views on the training module.

1. INTRODUCTION

Although Arabic is the medium of instruction at the College of Home Economics (CHE) in Riyadh, Saudi Arabia, graduate students majoring in art education need to be proficient in English to be able to read specialized reference materials in their major area of study and need to locate information in English resources such as journal articles, reports, dissertations and reference books for their courses, assignments, term papers and theses. For those reasons, graduate students at CHE are required to take an English-for-Specific-Purposes (ESP) course in the first semester of the doctoral program. In spring 2004, the author was in charge of designing and teaching this ESP course.

Due to latest advancements in computer technology, online dictionaries and encyclopedias, e-books and journals, websites for teaching language skills, grammar, vocabulary, spelling, literature, newspapers, tests, news groups, e-pals, discussion forums and online courses are now being integrated in EFL and ESP classrooms, in addition to online resources that modern libraries host such as OPACS and specialized electronic databases. However, online resources cannot be integrated in the ESP program offered to graduate students at CHE as no computer labs, no PC's, no LCD projector, no internet access are available in the classroom. No training programs or computer courses are offered. Therefore, an attempt was made to build a small network in the classroom to train graduate students in searching the internet for information and websites in art and art education. This study will describe how the students' language and internet searching needs were assessed, and what their English proficiency, computer and internet searching skill levels were. It will also describe how the small computer network was built in the classroom, what internet searching skills were integrated in the ESP course to meet students' pragmatic needs, and how those skills were developed and evaluated. This description will enable instructors to replicate the procedures in setting up the small computer network and in teaching ESP to other groups of graduate students. The study also shows how second language (L2) instructors can create learning environments that promote L2 learning and motivate students to learn and how they can effectively meet the students' needs (Al-Jarf, 2005b; Al-Jarf, 2001c).

2. LITERATURE REVIEW:

To be considered literate in the information age, students must develop functional, academic, critical, and technological skills (Kasper, 2002). Nasir (1996: 37-55) reported that only 58.3% of Malaysian students studying in the UK used CD-ROM databases and found them useful for thesis preparation, writing research papers, articles, and books. He recommended that non-users be made

aware of the availability of databases on CD-ROM and other information sources. In another study, Dodge (2001: 1) outlined the development of basic computer literacy skills courses at the San Jose City College, California. Six technology skills courses, referred to as the Getting Started courses, were developed to promote ESL students' basic skills information. Various groups of at-risk students piloted the Getting Started program. The courses proved successful in introducing ESL students to computers.

Developing students' technological skills was found to be effective in enhancing students' Web searching skills and attitudes. In this respect, Abowitz (1994, 58-64) indicated that integrating library instruction into undergraduate sociology courses helped develop the students' awareness of and ability to use library resources, and promoted active learning. In addition, training undergraduate students to search online databases, to construct search strategies, and locate library research guides from the World Wide Web helped enhance the students' attitudes, emotional experiences and search performance (Ren, 2000: 323-328). Web-based instruction provided a learning environment in which participants could develop electronic literacy skills and share their ideas and projects (Hindes, 2000: 88-101). Careless (2000: 1) concluded that Integrative Language Systems can be effectively used to supplement traditional ESL classroom instruction.

As to course design, Eisenberg and Johnson (2002: 1) described an integrated approach to teaching computer skills in K-12 schools. They developed a Curriculum Based on the Big6 Skills Approach, that focused on the following (1) task definition; (2) information seeking strategies; (3) location and access; (4) use of information; (5) synthesis; and (6) evaluation.

A review of the ESP literature showed that studies that integrate internet searching skills in ESP courses offered to graduate students majoring in art education are lacking. Hence, this study has both theoretical and practical implications for ESP instructors. It identifies the searching skills and training steps to be followed especially in learning environments with no technology.

3. METHODOLOGY

3.1 Participants

Ten female graduate students participated in the study. They were all art education major with a focus on sculpture, textile, ceramics, painting and photography, metalwork, handicrafts, and tie and dye. They were in their first semester of the doctoral program and were concurrently enrolled in three art courses. They were all lecturers teaching art courses to undergraduate students.

3.2 Identifying graduate students' technological needs

According to Dudley-Evans (1998:1), Jureckov (1998: 2), Flowerdew (1995: 19-35), Cruickshank (1983: 1), Al-Jarf (2005a), Al-Jarf (2001b) needs analysis is the basis of ESP course design. Therefore, the subjects' English language and technological needs were assessed by a needs assessment questionnaire which consisted of the following questions: *(A) For what purposes do you need English while studying? (B) For what purposes do you need English after you graduate? (C) For what Purposes do you need to use the internet while taking your Ph.D. courses and writing your thesis? (D) For what purposes will you be using the internet after you graduate? (7) What kind of information would you like to locate in the internet?*

To assess the students' proficiency level in English, they were pre-tested using a teacher-made English proficiency test consisting of a reading comprehension subtest, a vocabulary subtest and a paragraph-writing subtest.

In addition, the students' technological skills were assessed by a computer-literacy questionnaire. The questionnaire consisted of the following questions: *(1) Which computer software do you use? (2) How would you rate your internet searching skills (excellent 5 4 3 2 1 poor)? (3) Which search engines can you use? (4) Do you have an e-mail (5) What do you use it for (6) Have you had any prior training in searching the internet for websites in your major area of specialization?*

3.3 Data analysis

The students' responses were tallied and percentages of those who gave the same response were computed regardless of the students' area of specialization. The students' language and internet searching needs were identified.

4. RESULTS

Results of the English Proficiency Test revealed that 90% of the subjects exhibited poor comprehension skills, poor vocabulary knowledge and poor writing and spelling ability. They all expressed a need to learn English to be able to read specialized reference materials during the doctoral program and after graduation and to be able to translate the information that they need for their courses, assignments, term papers, and dissertations from English into Arabic.

Results of the computer literacy questionnaire showed that all the students had basic word-processing skills, only 30% had basic internet searching skills and can use Yahoo and Google. 70% had little experience searching the internet. Analysis of the responses to the needs assessment questions showed that all the students never had any training in searching for information and websites in their area of specialization. The students showed an interest in acquiring advanced internet searching skills such as locating art materials, tools, journals and magazines, professional organizations, conventions, journal and dissertation abstracts, journal articles, ordering books, art materials and tools, subscribing to e-journals, and joining professional organizations.

5. IMPLEMENTING THE SMALL COMPUTER NETWORK

Since technology is not currently used in ESP classrooms at CHE, a network of five laptops was implemented to accommodate the ten doctoral students. Building the small computer network helped the students access and share files, share a printer, and share the same Internet connection through the same phone line. The students were exposed to hands-on training and were able to view and follow the searching steps. Only 40% of the students had laptops. Each laptop was shared by two graduate students. The network was created and used as follows:

First, the necessary hardware was purchased. This consisted of a 5-port 10/100M Ethernet mini switch with a USB bus power supply and five networking cables. A network of two computers was first tried out at home before the five computers were connected and the network set up in the classroom. All five laptops were equipped with an Ethernet port, a modem, a network card, Windows XP Home Edition, a firewall and Internet Explorer. An Ethernet-based network was created with the author's laptop serving as the server (main computer). The main computer was connected to the hub with a networking cable and the hub was connected to the power outlet. The other laptops were connected to the hub with the networking cables.

To configure the network, the Network Setup Wizard that comes with Windows XP was used to name the laptops in the network, create the workgroup, and create a network bridge.

Next, a phone line was extended to the classroom from the main office in the department. The main computer was linked to the internet using the phone line. Internet Explorer was also configured for network sharing and use.

To enable the students to save, access, share, look at, modify, delete, rename, and add files and webpages, a shared documents folder was created. To enable the students to print files from any laptop or from the internet, a printer was shared. The latter was done by clicking the "Start" button in Windows XP, selecting the "Control Panel", clicking on the "Printers" icon, double-clicking the "Add a Printer" wizard, choosing the Network Printer option and clicking Next. The wizard installed the appropriate driver by requesting the insertion of the CD with the driver software.

With all the laptops in the network configured, each class session the five laptops were connected to the hub and were detached from the hub at the end of the session. During the training session, the internet and printer were shared. WebPages and other files were saved in the Shared Documents folder and were copied to their laptops later (Al-Jarf, 2005c).

6. THE ESP PROGRAM DESIGN

On the basis of the students' language and technology needs, and their proficiency and internet searching skill levels, an ESP course was designed to meet their pragmatic needs. The course had four components: (i) a reading comprehension component, (ii) a specialized vocabulary building component, (iii) a translation component, and (iv) a technology component. This study will focus on describing the technology training component only. The aim of the technology component was to develop the students' ability to search the internet for art and art education websites (Al-Jarf, 2004; Al-Jarf, 2001a). The training module focused on the following skills:

- Selecting, narrowing and widening search terms.
- Introducing Yahoo and Google.
- Searching for and locating art materials, art tools, art education professional organizations and conventions, and art education e-journals using Google or Yahoo.
- Searching for, locating and ordering art education books and magazines online using www.mazon.com.
- Searching for art education abstracts and full text articles in specialized electronic databases such as *ERIC, Grove Dictionary of Art Online, Wilson Art Abstracts Full Text, Wilson Art Abstracts, Wilson Art Index, and Dissertation Abstracts* databases.
- Browsing the search results and selecting the required items.
- Subscribing to e-journals.
- Filling out order forms and membership application forms.

6. TRAINING METHOD

The ESP class met once a week for 3 hours. The first hour was devoted to internet searching training. Each week, the students practiced one task. The order in which skills were developed and practiced was as follows:

week 1: search terms

The students were asked to write down a research topic in their area of specialization. They were shown how to identify related search terms, narrow them by using two- and three-word compounds and by combining them with other search terms using Boolean operators *(and, but, or)*, and widen them by using a single term.

week 2: Google and Yahoo

The students were shown how to connect to the internet, what the components of the Internet Explorer main page (*home, refresh, favorites, back, front, etc.*) are, where to type the search term, how to save URL's in Favorites and how to retrieve them, how to save webpages, find the number of search results, browse through the search results and select a particular link.

week 3: Amazon.com

Major components of the Amazon main page, selecting the search terms for the required books, entering the search term in the search box, selecting the field to be searched from the list, browsing through the search results, marking the selected items, add selected items to the shopping cart, filling out order forms *(name, address, country, phone #, payment method, credit card info, sending/submitting order)*.

week 4: electronic journals

Entering "e-journal & art education" in the search box in Google, selecting an e-journal from the search results, components of the journal's main page, browsing the table of contents, browsing current and back issues, searching for articles, subscribing to the journal.

week 5: professional organizations

Entering "associations & art education" in Google, selecting an association such as National Art Education Association (NAEA) as an example, components of the association's main page such as *publications, forms, news, evens, publication, resources,* and filling out membership application.

week 6: conventions

Entering "conference & art education" in the search box in Google; selecting a conference such as NAEA Convention as an example; identifying the components of the conference main page: *Call for proposals, submitting a proposal, registration, participation, sessions, dates and deadlines and location*.

weeks 7-11: Grove dictionary of art online, Wilson art index, ERIC, Wilson art abstracts, dissertation abstracts, Wilson art abstracts full text databases

Accessing a database by using the required URL, username and password; components of the database main page; selecting, broadening and narrowing of the search terms; selecting a Boolean operator *(and, or, not)*; selecting the type of field *(author, descriptor, keyword)*; marking the relevant records; selecting what to be displayed *(citation only, citation and abstract, full text);* viewing the search results; evaluating the search results; saving, printing or e-mailing the search results; returning to the list of records (citations) to select a new record to view, save, print, or e-mail; returning to the main page to conduct a new search; locating and filling out document order forms. The basic electronic searching terms and commands that are encountered in most electronic databases were identified on the screen, explained and listed. Examples are: *Advanced search, basic search, author, title, abstract, descriptor, keyword, search results, records, citation, full text, publication date, display, save, print, view, search, submit, browse, continue, connect to, proceed, login, clear, mark, unmark, select, request, obtain, order, previous, next, main, return to*. The students were also given a list of common abbreviations used in the citation, abstract and full-text articles such as: *AU= Author, TI=Title, SO=Source, AB= Abstract, DE= Descriptor, KW= Keyword* together with their full form.

Each class session, the author stated the focus of the session, login to the internet, then Yahoo or Google. The presentation phase consisted of entering a search term in the search box and looking at the search results with the students. The students took turns to read out loud the search results, select certain items to be translated together. We always saved the URL in Favorites and saved the webpage in the Shared Documents Folder, so that the students remember the searching steps when they practice on their own at home. The students took notes and wrote down the new technical terms. Then hands-on guided practice was conducted in pairs under the author's supervision. For consolidation, a post-session hands-on independent practice at home was conducted. Every session, a homework assignment focusing on a task similar to the one practiced in class was given. The assignment required identification of a search term, using it to locate websites, to browse the website and identify its components. The students printed the pages, filled out forms, translated certain parts of the webpages and submitted them to the author for feedback (Al-Jarf, 2003b).

7. TRAINING EVALUATION

Throughout the training sessions, the students were excited, enthusiastic and eager to learn. They always submitted their homework on time. Although they were intimidated by technology at the beginning of the semester; at the end of the semester, they felt more comfortable browsing the internet in English. The post-training questionnaire revealed positive attitudes. All the students found the training sessions very helpful in developing their skills in searching for materials and websites relevant for their courses and for their work after graduation.

At the end of the semester, training was assessed in a two-hour session in which the students were given research topics and were requested to identify some search terms, locate few books, journal and dissertation abstracts. Screen shots of conference and association websites, search results from

Amazon and an abstract with abbreviations were printed and handed out to the students together with questions that required the students to define and translate the marked parts (Al-Jarf, 2003a).

8. CONCLUSION

In learning environments where technology is unavailable to students and instructors in the classroom, a small network using students' laptops can be easily built in the classroom to enable the students to share files, a printer, and internet access. It helps the students learn English and internet searching skills in their area of specialization. A wireless network can be installed and DSL Internet Access may be used for faster internet browsing. It is suggested that Internet searching training start in the undergraduate program at CHE to devote more time to electronic database training at the graduate level, and to devote more time to enhancing graduate students' reading comprehension and translation abilities.

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