A NEW PARADIGM IN ESP TEACHING AND LEARNING

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Nowadays, every aspect of education, including the way we teach and learn, is being affected by technology, especially by the emergence of the Internet (Kung & Chuo, 2002). Since this technology tends to become an integral part of the modern world, it is used as a prevailing means for communication and education. In the meantime learners’ interest in ESP (English for Specific Purposes) has been reinforced by the popularity of the Internet. The Internet offers numerous authentic materials and ample opportunities to communicate in the foreign language. It fits into current theories of communicative language learning and learner autonomy (Davies, 2002). The present study aims to investigate the effect of teaching ESP materials through Web-based instruction and compare the result with that of the traditional text-based instruction. Meanwhile, the effect of selected ESP Web sites on ESP learning and factors contributing to learner autonomy are to be evaluated too. Hence, Data were collected form 82 students majoring in Nursing at Shahid Beheshti Medical Sciences University. A pre-test and a post-test on paramedical and Nursing-related texts were applied. The end results of the study revealed that the students had positive attitudes towards using the recommended Web sites in their ESP learning. Although there were some limitations such as lack of good access to the technology, the students found that learning ESP materials through Web sites was not only fun but also collaborative and student-centered.

Keywords: English for Specific Purposes (ESP), Computer-Assisted Language Learning (CALL), Incidental vocabulary learning, ESP web sites, Learner autonomy.

Introduction

The world is turning out to be an information world in which the Information Communication Technology (ICT) plays an important part. In such a world, the rapid growth of the Internet makes widespread computer-based instruction a reality (Li & Hart, 2002). So, new technologies ought to be assimilated into the curricula and into teaching methods. Thus universities will have to prepare their students for the information world and make effective use of ICT to provide better education (Assche, 1998).

According to LeLoup and Ponterio (n.d./1998), “There are a number of aspects that are inherent to the ICT which make it particularly fit for teaching languages, especially ESP.” First of all, the Web is a genuine treasure trove of authentic materials for ESP instructors. Teachers are always looking for authentic materials, but their resources are limited. Consequently, the Internet is proved to be a real boon or a bonus for instructors.

Second, such information on the Internet will be up-to-date, so the teacher is no longer forced to use old-fashioned and outdated materials. (Web for Schools, n.d./1998)
Along with ICT developments, some issues in Computer-Assisted Language Learning (CALL) have also evolved from an early emphasis on how to use the new technology to research on effects the technology may have on learning. According to Hanson-Smith (2001), “CALL has branched out in many ways in communicative pedagogy. The significant interest of CALL is to compare the computer-enhanced with "traditional" or "conventional" classes, i.e. to compare the effect of learning through computer-based or Web-based materials with that of text-based materials”. (p. 107)

Many studies have been carried out on computer-assisted enhancement in instructed acquisition, including pronunciation (Eskenazi, 1999), grammatical structures (Collentine, 2000), and lexical items (Laufer & Hill, 2000). There are also many articles and publications, e.g. Felix (1999), Osuna and MEskill (1998), Singhal (1997), Sperling (1997), Warschauer (1995), and Warshauer, Schertzer and Meloni (2000). And many researchers have reported the use of computers in ESP (English for Specific Purposes), e.g. Robinson (1991). As Paulsen (2001) states, ”it is no longer a question of whether to take advantage of these electronic technologies in foreign language instruction, but of how to harness them and guide our students in their use.”

Language instructors may experience a variety of ESP Web sites searching the Internet. Authentic language, increased motivation, interaction, creativity, student-centeredness, discovery method of learning, and working independently can be the reasons for using Web sites in ESP learning. According to Opalka (2002), “Teachers should be aware of certain problems such as accuracy, appropriateness, and appeal (easy to use, interesting to read) and reliability of the information on the web when applying Web sites in the classroom.”

Nevertheless, instructors’ contribution remains important in orchestrating group planning, drawing learners’ attention towards linguistic aspects of computer-intervened texts, helping students develop individual learning strategies, and creating an appropriate atmosphere for language learning. To fully exploit these opportunities, the teacher must learn to become a “guide on the side” rather than a “sage on the stage” (Warschauer, 1997).

Review of Literature

According to Dudley-Evans & St. John (1998) and Anthony (n.d.), “ESP is centered on the language appropriate to the activities of the discipline it serves in terms of grammar, lexis, register, study skills, discourse and genre.” Another definition is offered by Komarova and Lipgart (1994), cited in Viel, 2002 who say, "by ESP we understood a variety of English characterized by two most important features: 1) Definite conceptual orientation, and 2) a set of linguistic restrictions imposed upon the contextual functioning of words." On the other hand, Kavaliauskiene (2003) suggested that ESP courses provide learners with the kind of language they will encounter in their future profession, through authentic recording of lectures, and formal pieces in writing, all of which enable them to make professional presentations and help them participate in contemporary related issues. These definitions insist on teaching the particular language of one's specific occupational context.

With regard to ESP vocabulary, surveying the literature reveals that no one argues that the score of specialized vocabulary in English for Specific Purposes (ESP) is a primary goal and for many people vocabulary, particularly specialized vocabulary (or terminology) is a key element of ESP. So, it seems that, vocabulary studies and, particularly the teaching of terminology, appear to have been somewhat neglected in ESP.

According to Kavaliauskiene & Januleviciene, (2001), “The difficulty that most instructors suffer emerges from students' limited general vocabulary”. So, students find it difficult to cope with learning English, basically because of lack of the General English skills.

A. Teaching ESP Through Text-Based Materials

Do ESP textbooks really exist? This is the central question Johns (1990) addresses. One of the core dilemmas he presents is that "ESP teachers find themselves in a situation where they are expected to
produce a course that exactly matches the needs of a group of learners, but are expected to do so with no, or very limited, preparation time" (Johns, 1990: 91, cited in Gatehouse, 2001).

According to Sysoyev (2000), “For many teachers, a selection of teaching materials is based on their availability. Furthermore, chosen materials determine the content of the course and the use of the same syllabus with different students is something that happens quite often.” In a student-centered instruction, the suitability of materials is parallel to student comfort and familiarity with the materials, proper language level, interest, and relevance.

Nevertheless, instructors teaching at universities are most of the times dependent on the materials and are required to teach the same textbook over and over again. In our situation, this is sometimes because of unavailability of a textbook for a given course. For example, there is a 2-credit course for ESP for the B.S. students majoring at Radiology who are studying in Iranian Paramedical Colleges, but one can hardly find the appropriate materials for the respective course. Potentially, there is nothing bad in using the same teaching materials if everything is conceptualized through a learner-centered approach. As Graves (1996:27) says, "tools can be figuratively cut up into component pieces and then re-arranged to suite the needs, abilities, and interests of the students in the course" (Cited in Sysoyev, 2000).

B. Teaching ESP Through Web-Based Materials

It is proved that a collection of a massive number of reference materials can be found in the Internet. Such materials could be assessed and selected through using common search engines or directories. Having found the relevant Web sites, it is necessary to evaluate information, in particular "source accuracy (i.e. authority, objectivity, and coverage), appropriateness (for learners' needs), and appeal (easy to use, interesting to read)" (Opalka, 2002).

Some instructors think that access to the Internet materials needs to be controlled in order to prevent students from downloading undesirable materials. A multitude of information on the Web poses requirements to its users who must be able to search for necessary information effectively. According to Kavaliauskiene, (2003), “Before students acquire some experiences in sorting out information, instructors' guidance in selecting appropriate materials is necessary. Otherwise, learners might be overwhelmed by the amount of information and its linguistic difficulty.”

Hence, whatever reasons instructors have for teaching English via the Web, the first important point is to elucidate their goals for using the Internet, e.g. teaching writing, revising vocabulary, and preparing a project. It is extremely fundamental to remember that little is usually gained by just adding random online activities into the ESP classroom. The second important point is integration of online activities into the course curriculum rather than adding these on top of the rest of classroom activities in a disconnected fashion. The third problem that instructors often encounter is that there are a number of complexities in introducing the Web-based activities. A few to be mentioned are basic computer illiteracy of EFL/ESP students, malfunction of hardware and software, and slow loading of Web sites. Therefore, Warschauer (1997) recommends that teachers have to provide support, i.e. personal help to learners during activities, assigning students to work in pairs or groups, and create detailed handouts. These measures should prevent students from being besieged by encountered difficulties and discouraged.

Purpose of the Study

This study tends to investigate the role of the Web-based instruction in ESP terminology learning. In this regard, the researcher designed a project to find the effect of Web resources, i.e. Web sites, as materials for ESP courses and compare the result with that of the text-based materials, i.e. the traditional form of using books. The overall purpose of this study is to see how teachers could effectively help students learn ESP terminology through Web sites. Therefore, the main purpose of this study is to consider these questions:
1. Is there any difference between using text-based materials and Web-based materials in ESP vocabulary learning?
2. Do teacher-introduced Web sites add to the learner’s autonomy in ESP?
3. Do teacher-used guidelines prove to be useful in enhancing ESP learning through Web sites?

Methodology

Participants and Study Setting

The participants for this study were two groups of 41 Nursing students studying at Shahid Behshti Midwifery and Nursing College in Tehran, Islamic Republic of Iran. These students had completed their General English courses and enrolled for the ESP course. Their ages ranged from 21 to 24, both male and female. They studied ESP for two hours a week. One group was exposed to the Web-based instruction and the other group to the (traditional) text-based instruction.

Procedures

The present study was conducted in the first semester of the academic year of 2010. The subjects being exposed to the Web-Based Instruction were given handouts in the first session where hints and guidance for using the Internet were provided. They were assigned to find Internet articles on ten Nursing concepts listed in their handouts. These concepts were taken from the book: “English for the students of Nursing” (Kayhani, A. et al. 2001). The task for the students was to present the selected articles according to their order in the handout. They were instructed both theoretically and practically to use the Internet in order to find the related articles on the Web sites. They were recommended to use the advanced search option of common search engines like Google, Yahoo, Alta vista, etc. The students were to look for articles on at least four concepts and deliver it to the class once approved by the instructor.

The subjects in the other class were exposed to the text-based materials. The students studied a text book titled: “English for the students of Nursing”. Both classes received a pre-test before the treatment and a post-test two months after the treatment. The pre-test contained eight ESP Nursing passages using a cloze test to assess the participants' knowledge of technical vocabulary. The same cloze passages used in the post-test were intended to assess the effect of the two kinds of materials on the students' learning ability of technical vocabulary.

Data Analysis

The data in this study were obtained from the Web-based and text-based classes' performance on the pre-test and post-test.

The obtained means of pre-test and post-test for both groups are shown in Table 1. The scores were computed by means of an independent sample test and the SPSS Software.

<table>
<thead>
<tr>
<th>Factor</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-TEST</td>
<td>1.00</td>
<td>41</td>
<td>16.3902</td>
<td>6.41435</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>41</td>
<td>13.5122</td>
<td>7.32844</td>
</tr>
<tr>
<td>POST-TEST</td>
<td>1.00</td>
<td>41</td>
<td>31.1463</td>
<td>7.16087</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>41</td>
<td>22.6341</td>
<td>6.43722</td>
</tr>
</tbody>
</table>

Table 1. The means of pre-test and post-test for the two groups of learners.
As it can be seen, Levene’s test assumed equal variance for the two populations. Table 2 shows that the result of t-test for pre-test is not statistically significant at the probability level of .062, which is higher than 0.05. This means the two groups had almost the same performance on their pre-test. However, the result of t-test for the post-test is statistically significant at the probability level of .000, which is lower than 0.05, meaning the treatment was effective.

Table 2. The result of the independent sample test for the two groups of learners.

<table>
<thead>
<tr>
<th></th>
<th>Levene’s Test for Equality of Variance</th>
<th>T-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F.</td>
<td>Sig.</td>
</tr>
<tr>
<td>PRE-TEST</td>
<td>1.172</td>
<td>.282</td>
</tr>
<tr>
<td>(Equal variance assumed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POST-TEST</td>
<td>.373</td>
<td>.543</td>
</tr>
<tr>
<td>(Equal variance assumed)</td>
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</tbody>
</table>

As it is seen in Table 2, the mean difference is positive, meaning better performance of the group that received Web-based instruction.

Results and Discussion

The students’ perception of and their attitude towards the materials in both classes were different. Those who received the Web-based instruction were more satisfied with the materials than those who studied the book. The latter had difficulty with the linguistic complexity of the passages. This made them struggle through the lessons and, as a result, the pace of teaching was rather slower.

On the other hand, teaching the Web resources was more satisfying to the other group. There were no long passages having too many words and the students had less difficulty with the grammatical structures. Within the two sessions the students could study more papers on a concept in comparison with the students studying the book. It seems that Web-based instruction can result in a better incidental learning of vocabulary through extensive reading.

Concerning the learners’ attitudes, they reported some drawbacks in learning through the Web sites, e.g. slow uploading of the Internet connection, lacking common computer skills, and inability to evaluate the information they found which is basically considered a reading comprehension problem. This latter problem prolongs the search for appropriate information, and the outcome is not always satisfactory.

Conclusion

This study evaluated a program aimed at teaching ESP terminology through Nursing resources on the World Wide Web. The results confirmed better performance by students in learning ESP terminology through Web-based materials compared with the studying of (traditional) text-based materials.

A major advantage of using internet-based materials in ESP classes is the vast variety of technical resources in any given field. The students' motivation to take part in classroom activities and their desire to deliver more materials from the Internet were highly significant. Repetition of technical vocabulary through extensive reading of different texts improves incidental vocabulary learning.

The analysis of the results also revealed that there was a positive attitude towards the chosen ESP Web sites. Therefore, it can be argued that Internet-based teaching of ESP can be an extremely powerful
educational tool. The analysis of the results also verified the usefulness of ICT in the ESP classroom and development of learner autonomy.

Little access, high cost, low speed, lack of downloading skills, and too much time spent were the main limitations and problems the learners encountered. However, they were willing to use the Web in further studies because, “the students of this age are becoming more visually oriented and those who navigate the Web are actually reading” (Marco, 2002).

Since global communication will become increasingly important, and knowledge of English, being a world language, will be paramount, therefore; students will have to acquire both computer and language skills to be successful in the information age. So, it can be concluded that the integration of the Internet in the ESP classroom is a big step in the right direction in this era. To increase the efficiency of the Net in teaching and learning ESP texts, following suggestions can be considered:

- **More access to ICT**: Computers should be available more to individual students to be an integral part of ESP learning.
- **Updated systems**: To optimize the effectiveness of Internet-based learning and teaching of ESP and ICT, communication and electrical systems need to be updated.
- **Learning atmosphere**: To foster ESP learning, the computers should be viewed as an essential medium for ESP learning and instruction.
- **Professional development**: To solve the technical problems and make effective use of ICT, instructors should receive the necessary instruction to incorporate ICT into the curriculum and become familiar with both hardware and software.

**Delimitation of the Study**

The treatment was conducted over a relatively short period of time, and this might have adversely affected the result. The fact that the study was conducted with only two classes of students in a single college may also limit the extent to which the findings can be generalized to other populations.

**Pedagogical Implications**

According to Depoe (2001), “The key to success in the new millennium will be information”. Therefore, to make effective use of the most up-to-date information and new technologies, instructors might be advised to take a step back and focus on some basic pedagogical requirements. The following guidelines are designed to help them implement computer network-based activities into the ESP language classroom.

**I. Consider Your Goals Carefully**

Since there are so many ways to integrate the Internet into ESP instruction, it is important for the instructor to elucidate his or her goals for using the Net, e.g. provoking students' motivation; increasing students’ reading fluency; speeding up their ESP reading comprehension; teaching ESP terminology; revising ESP vocabulary; preparing learners for writing ESP projects or creating a certain kind of linguistic environment for students. Clarifying course goals is first step toward successful use of the Internet.

**II. Think About Integration**

Integration of online activities into the ESP course curriculum rather than adding these on top of the rest of ESP classroom activities is one of the complex tasks that the instructor may face with in designing his or her goals for using the Internet into ESP instruction.
III. Don’t Underestimate the Obstacles

There are a number of complexities in introducing the ESP Web-based activities. A few to be mentioned are: basic computer illiteracy of ESP students, malfunction of hardware and software, and slow loading of Web sites. A situation which overweighs both students and teacher in technical difficulties is not likely to bring about the desired results. So, it is better to start small and to create the kinds of activities which have a direct purpose and are well-integrated into ESP classroom goals. If these activities prove successful, you can build from there and attempt a more ambitious plan the following semester.

IV. Provide Necessary Support

Considering the complexities which can arise when using Internet in teaching ESP courses, teachers need to provide support sufficient to prevent students from being overwhelmed by encountered difficulties and discouraged. This kind of support can take numerous forms such as: personal help to learners during activities, assigning students to work in pairs or groups, and create detailed handouts.

V. Involve Students in Decisions

The nature of computer-mediated communication creates opportunities for more de-centered interaction. (for summaries, see Warschauer, 1996b; Warschauer, Turbee, & Roberts, 1996). To fully exploit these opportunities, the teacher must learn to become a "guide on the side" rather than a "sage on the stage". Teachers' contributions in a learner-centered, network-enhanced ESP classroom include coordinating group planning, focusing students' attention on linguistic aspects of computer mediated texts, helping students gain meta-linguistic awareness of genres and discourses, and assisting students in developing appropriate learning strategies.

In the end, each instructor will have to find her or his own way, based on the goals set by the instructor and the program, the needs of the students, as well as the materials and the technology available.

References


21. ———— (2002). "What can the World Wide Web offer ESL teachers?" In Richards,


