ESP Approach for Using a Multimedia Interactive Learning Environment for College Students

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Abstract
In English language teaching, the often very different needs of learners have given rise to English for specific purposes (ESP). To this end, we developed a new approach for teaching English to help our first-year nursing students to study their specialist field in English in a motivating manner. In this study we incorporated the movie as an attractive ESP material into our custom-made SMILE for ME (Synchronized Multimedia Interactive Learning Environment for Multimode Education) program that provides individualized English study. We used a movie that is deeply related to the students’ subject matter as a material for listening practice and deepening understanding of medical ethics. Our custom-made CALL system was used for both listening practice and deepening the understanding of medical ethics issues. Analysis and comparison of pre- and post-course assessments that were completed by students in English revealed that repetitive listening and watching of the scenes through the CALL system helped students generally improve their listening abilities and explore the ethical themes of the movie deeper.

1. Introduction
This study shows how the authors incorporated the elements of ESP with a movie that was presented through a custom-made CALL program. The importance of English for Specific Purposes (ESP) is now widely recognized in the English teaching world (Master & Brinton, 1997; Dudley-Evans & St John, 1998; Miyama et al. 2000). Strevens also discussed the advantages of ESP: “It is focused on the learner’s need, it wastes no time; It is relevant to the learner; It is successful in imparting learning; It is more cost-effective than “General English.” The era of the learner-centered approach has arrived and English education that caters to learners’ specific needs is drawing attention. Considering that there are such advantages of ESP, introducing ESP for our students seem quite appropriate.

Huchinson & Waters (1987) state that, “whereas English had previously decided its own destiny, it now became subject to the wishes, needs and demands of people other than language
teachers." (7) We as language teachers are now required to meet the needs of students who are going to work in various fields. It is our task to help students acquire practical, useful English skills that they can use in their respective working field.

ESP is often designed for adult learners, either at a tertiary level institution or in a professional work situation. (Dudley-Evans and ST John, 1998, 5). This means that ESP is often intended for an advanced learners. They also maintain, however, “It (ESP) could however, be used for learners at secondary school level. (5), “…it can be used with beginners.” (5) They recommend “the presentation of the whole of English Language teaching on a continuum that runs from clearly definable General English courses through to very specific ESP courses.” (8) On this continuum, we can introduce ESP in phases, so it is possible to adopt ESP approach for beginners.

From these perspectives we reached a conclusion that the first-year students at nursing college students can benefit from English course that has a focus on some of their skills in the nursing field. This study was, therefore, based on one of the subject matters of the students, nursing ethics and on the acquisition of practical English skills.

2. The use of a movie

An entire movie was presented to promote improvement of English listening comprehension and understanding of nursing ethics issues. Porter and Roberts (1987) maintain that students “must be given the chance to listen in authentic ways.” That approach will help the nursing students to become more aware language learners as authentic English in terms of speed is what they will be dealing with in their workplace. Movies can provide both verbal and nonverbal messages that are useful for listening practice. We therefore decided to use a movie as an authentic resource for the students.

Sherman (2003, 2) points out the positive aspect of using the authentic movie. She says, authenticity itself is an inducement — there is a special thrill in being able to understand and enjoy the real thing.” Also, Rivers (1981) emphasizes in terms of students’ motivation, the power that movies have is enormous. “With well constructed pictures or films, they find language classes more interesting and enjoyable … As they associate phrases with people and incidents in the pictures, rather than learning them as abstractions, they realize that these utterances serve real purposes.” (207) Therefore, using an authentic movie would appeal more to college-level students than materials tailored for language learners in terms of content and speed of spoken English.

For this study that is focused on ESP, we chose the Hollywood movie, “Awakenings” which is based on a true story and account of neurologist Oliver Sacksis experiments with the victims of a rare “sleeping sickness”, called encephalitis lethargica. In this movie, the doctor tried an experimental use of a synthetic drug, L-Dopa that awoken the patients miraculously during
one summer. Later, the patients went back to the original sleeping state. This movie depicted unfailing friendship between patients and medical professionals. It is not only entertaining but it contains a lot of controversial medical themes, making this one suitable for nursing students. Some of the themes are, “If it is ethical to administer experimental drug to the patients” (question 1(Appendix 2)), "If it is valid to confine the patients with neurological disorder in the hospital ward against their will” (question 2(Appendix 2)) "If it is appropriate for the medical professionals to get emotionally involved with patients.” (question 3(Appendix 2))

To help the students understand the nursing and medical ethics through English classes, it is important to deal with some of the topics used in the class of Nursing Ethics. Nursing Ethics is one of the compulsory subjects for the first-year students. They are expected to learn various ethical issues in the field of nursing using such textbooks as iCare no situs wo takameru kango rinri (Nursing ethics that improve the quality of care) Nursing ethics-theory, practice and research. These textbooks have related topics that concern ethical issues (especially question 3) depicted in the movie. As for question 1 and 2, the students will learn in the subjects, “Psychiatric nursing” and, "Pharmacology” in the second year. We decided to use the movie and its three controversial themes because these are related to the students’ subject matters deeply. (question 1-3).

3. Combining the movie and CALL

In promoting the understanding of both nursing ethics and practical English skills, we decided to combine computer assisted language learning (CALL) with a movie that is related to the subject of nursing ethics. One reason for choosing this approach is that the combination of CALL systems and multimedia has proven to be effective in promoting English skills, especially listening skills (Kawanari, 1999; Brett, 1995; Shiina, 2001).

Also, CALL can be a great motivator for the students to study English. Rivers (1981) maintains that “For those with the funds and facilities, videotapes and computer assisted instruction further extend students’ potential for learning a language at their own pace and in their own way.” (398) In this age, technology enhanced language learning has almost become the norm. English teachers should make the best use of CALL. In appealing the positive impact of CALL, Chapelle (2001) also stresses that “They (CALL tasks) should engage learners’ interest in the target culture in a way that will help develop their willingness to seek out opportunities to communicate in the L2.” The author (J.Y) used CALL in the classroom for several years and knew from experiences that the such statements made by Rivers and Chapelle are convincing. CALL tasks indeed are powerful in promoting the students’ potentials.

Unlike CALL in old days, CALL of today, as Lafford and Lafford (1997) describes, "use audio technology capable of reproducing crystal clear audio CD-quality voice and music by
playing digitized sound files.” In other words, students today have access to English learning materials that are almost the same in quality as ones they enjoy in their free time. By using materials such as movies, we can maintain the interest of the students in studying English in a CALL setting. In describing multimedia-based resources, Brett (1995) reported that a combination of written and aural media provides input that is more comprehensible and, as such, is more likely to become intake. Another reason for selecting CALL is that most CALL systems offer learner-controlled learning. Brett (1995) maintains that learners need to make choices for the provision of the learning experience, as this will produce a more aware language learner. As we also aim to develop language aware learners ready for ESP learning, CALL centered approach seemed an appropriate teaching method. In addition, the use of visual aids was assumed to be helpful, given that Ur (1984) described the way in which students try to listen to English without any visual aid as, “hearing blind”.

As researchers stress the effectiveness of showing captions in L2 (Borras & Lafayette, 1994; Kikuchi, 1996), we created the system whereby students can view the English captions concurrently with the movie. In addition, our program involves students learning English by watching a movie that incorporates issues of medical and nursing ethics. This was accompanied by the use of our own specially developed “Synchronized Multimedia Interactive Learning Environment for Multimode Education” (SMILE for ME) program that combines the various learning opportunities in one interface. This learning system therefore provides the students with numerous opportunities to listen and watch authentic movies aided by English captions. This course was also backed up by the use of more traditional paper-based learning materials that were created exclusively to accompany this course.

4. Hypothesis

We posited that, following participation in the individualized course, students would show an improvement in both listening comprehension, measured by scores on the listening sections of official TOEIC test guides (Educational Testing Service, 2000, 2002). Also they will increase understanding of the issues of medical and nursing ethics discussed in the movie and during class, measured by questionnaire responses.

5. Learning Methods Employed

The entire English-language movie, lasting approximately two hours, was shown to the students over two class periods. Japanese subtitles were displayed to promote the students’ understanding of the storyline and the theme to be studied as a whole. Thereafter, students watched 3- to 5-minute movie clips that are related to the ethical issues using the SMILE for ME system to aid learning.
5.1. Written materials to augment understanding:

To improve the students’ listening skills, we prepared written material with listening pointers for each segment of the movie. We targeted one listening area at a time by providing strategies or instruction, including aspects related to speech (e.g., obscure vowels, elision, assimilation, weakening) and those related to language (e.g., function and content words, and tag questions).

5.2. Adjustment of the speed of speech to aid listening comprehension:

Most students did not understand English dialogue at natural speed, as presented in the movie. Therefore a function that allowed us to slow down the speech was used to enable the students to listen repeatedly to each meaningful chunk of script and modify the speed according to their individual needs.

6. Features of the CALL system

The name of the program we use in our CALL system is the “Synchronized Multimedia Interactive Learning Environment for Multimode Education” (SMILE for ME) program developed by one of the authors (T.O.). This system synchronizes movies with captions and other data and delivers them via the Web to a personal computer (Figure 1, appendix 1). Functions can be used in stand alone mode.

In terms of feedback and evaluation, individual user’s answer files are automatically constructed on the desktop and a record of the user’s study can be shown chronologically using an Excel macro. This enables the teacher to give students prompt feedback and evaluate the students’ skills efficiently. Table 4 is the study record of a student (ID30052). It shows that the student began to catch certain spoken words in the movie correctly in her third or fourth trial while unable to do so till the end for some phrases.

After this activity, students were provided access to the specific answer file that could also be viewed alongside their own answers. The system allows for easy retrieval and viewing of the answers with the aim of helping the students to become independent, aware learners.

7. Course Design

Class is an English conversation (1) 22 students (19 females, 3 males) and the Period was between May 2004 and November 2004 (12 classes (90-minute class)). The materials we used are, DVD movie, Awakenings (Sony Pictures Entertainment, 1990) and the CALL program, SMILE for ME.

The course is divided into four main types of activities presented in the following order: a) a pre-course assessment of the understanding of ethical issues and English listening
comprehension (2 classes); b) viewing the movie to focus on developing a better understanding of ethical issues (2 classes); c) CALL activities using the movie to promote development of English listening comprehension and a deeper understanding of nursing ethics (8 classes); and post-course assessments of English listening comprehension and d) the understanding of nursing ethics issues (1 class).

7.1. Pre-course assessment:

In the first class, one of the authors (J.Y.) introduced and explained the three themes of the movie related to ethical issues (appendix2) and showed them the opinions of a cooperating medical doctor. The students were then given one week to conduct research related to these issues on their own, prior to assessment.

In the second class, the pre-listening test was conducted using the listening section of an official TOEIC guide (Educational Testing Service, 2000) as an objective test of listening. Although listening practice in our course mainly involved gap-fill activities, the students were also required to understand specific themes of the movie through listening. Therefore, we used this standard listening test to determine objectively whether their general listening comprehension skills improved.

Also, to determine how clearly the students understood the ethical issues raised in the previous class, they completed a questionnaire in which they selected an opinion from a 5-point Likert scale which represented their understanding of specific nursing medical issues; answers ranged from (-2) I don’t agree at all (-1) I don’t agree, (0) I’m not sure, (1) I agree, and (+2) I agree very much. Also, to determine how clearly the students understood the ethical issues raised in the previous class, they completed a questionnaire in which they expressed their ideas in writing about these issues using key words that the cooperating medical doctor had prepared. We decided that providing vocabulary related to each issue would help the students form their own ideas and express their opinions. (The vocabulary was originally provided by the doctor in Japanese and it was translated into English by the author).

We confirmed that none of the students received additional English listening lessons outside of this class.

7.2. Viewing the movie:

Over two classes, students watched the movie concerning the three themes they had just studied. To meet the objective of helping students have a complete understanding of the story, they viewed the movie with Japanese captions. Throughout this activity, students were encouraged to give careful thought to the three ethical issues that were depicted in the movie.
CALL activities: Over eight 90-minute classes, e-learning using SMILE for ME (60 minute per lesson) was conducted. From the entire movie, we had selected 10 scenes related to ethical issues and created 6 clips for students to use involving those scenes (appendix 3).

The movie clips were digitized for the study and the students engaged in gap-fill listening activities using SMILE for ME. After completing the task, each student retrieved an answer file to check their answers.

7.3. Post-course assessment:
In the final class, to determine changes in listening comprehension, we used the listening section of an official TOEIC guide (Educational Testing Service, 2002).

For the post-course assessment of the understanding of nursing ethics issues, students completed the same questionnaire of five-point Likert scale and wrote their reasoning for their answer in English as they did in the pre-course assessment.

8. Methods of Analysis
8.1. Listening comprehension:
To determine changes in listening comprehension skills, students’ mean scores were compared for the pre- and post-listening tests. Pre- and post-listening test scores were compared using a t-test.

8.2. Graphs to assess the overall understanding of ethical issues:
We created graphs that enabled us to assess students’ understanding of controversial medical and nursing issues. Students selected an opinion from a 5-point Likert scale (pre and post assessment). This 5-point Likert scale values for each of the students were plotted on the x-axis. If the gravity center of a circle of post assessment (solid line circle) moves outward, it can be determined that they came to have clearer ideas (either I don’t agree (at all) (which are -1, and -2 point respectively or I agree (very much) (Which are 1 and 2 respectively) rather than “I am not sure” (0 point). In other words, if the outward movement of the gravity center on the x-axis happens, it means that the students come to have clearer ideas on the issues.

The number of vocabulary each student used in the sentence was plotted on the y-axis (they represented their degree of clarification of thought in writing for the issue posed in pre and post assessment).

The increase in the number of vocabulary can be considered as the sign of their deeper understanding because of the following reasoning.

According to Zimmerman (1997), the learners’ understanding of vocabulary can be judged on one’s knowledge scale that ranges from a) to d) (Table 1).
Table 1: Learners’ understanding of vocabulary

<table>
<thead>
<tr>
<th>Level</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>I don’t know the word</td>
</tr>
<tr>
<td>b)</td>
<td>I have seen the word before but I am not sure of the meaning</td>
</tr>
<tr>
<td>c)</td>
<td>I understand the word when I see it or hear it in a sentence, but I do not use it in my own speaking or writing</td>
</tr>
<tr>
<td>d)</td>
<td>I can use the word in a sentence</td>
</tr>
</tbody>
</table>

If the students can use the vocabulary in a correct sentence and relevant context, which is level d), it can be concluded that they clearly acquired the vocabulary. In other words, they cannot use the vocabulary unless they clearly know what they are writing. From this reasoning, we determined that the change in the number of vocabulary of medical and ethical issues shows their degree of understanding of the issues in question. So the number of key words and phrases used by each student was counted and plotted on the y-axis of the graph. If the gravity center of a circle of post assessment (solid line circle) moves upward, it can be determined that, on the whole, they come to have clearer ideas.

If the gravity center moved both outward and upward, the circles was naturally become larger, leading to the conclusion that the movie based CALL course helped the students deeply think about the controversial issues.

Pre- and post-numbers of vocabulary were compared using a t-test. For all statistical analyses, a p value of less than 0.05 was considered significant. Explanations of the graphs were made in more detail in the next chapter (9.2).

9. Results
9.1. Listening Comprehension

For each of the listening tests, the students’ scores were summed and compared. As Table 2 shows, the mean post-listening test score was significantly improved by 5 points (p<0.05; Table 2).

Table 2: TOEIC Listening Test Scores (TOEIC official guide mini-test)

<table>
<thead>
<tr>
<th>Paired sample t-test of Listening comprehension test</th>
<th>Mean student score</th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number</td>
<td>45.95</td>
<td>51.00*</td>
<td></td>
</tr>
<tr>
<td>variance</td>
<td>85.34</td>
<td>63.40</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>21</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (T ≤ t) one-sided</td>
<td>0.032561</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference between pre- and post-test scores (P<0.05)
9.2. Understanding of Nursing Ethics Issues

The data was plotted on Figures 2 to 4 which show the students’ interpretation of the ethical issues (Question 1, 2, 3 cf. Appendix 2). Y-axis is the number of relevant key words and phrases used. X-axis is the answers to ethical questions. (N=20). Two far range values on the post-test were considered to indicate development of a more concrete opinion based on improved understanding of the issue. Filled triangles and open squares indicate pre- and post-course assessment scores for individual students, respectively. Dashed line and solid line indicate pre- and post-course assessment scores for clarity of thought regarding ethical issues, respectively. The average values for all students’ use of key words rose in all three figures (Table 5, Figures 2-4). Figure 2 shows the x-axis value moved from 0.36 to 0.99.

Likewise, in Figure 3 regarding Question 2 results, the value changed from 0.49 to 0.63, and in Figure 4 regarding Question 3 results, it changed from 0.43 to 0.69. We can see from the graphs that the gravity centers of Figure 2, 3, 4 all moved both outward and upward. From these results, we can safely say that their understanding of the issues using the movie based CALL became deeper with less “I am not sure” answers.
Table 4: Students’ study records  (excerpt)

<table>
<thead>
<tr>
<th>Students ID number</th>
<th>Elapsed time</th>
<th>Answer: reach him</th>
<th>Answer: a piece of music</th>
<th>Answer: another human being</th>
<th>Answer: remained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>[----------]</td>
<td>[----------]</td>
<td>[----------]</td>
<td>[----------]</td>
</tr>
<tr>
<td>30052</td>
<td>150</td>
<td>[reach him]</td>
<td>[----------]</td>
<td>[----------]</td>
<td>[----------]</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>[reach him]</td>
<td>[----------]</td>
<td>[----------]</td>
<td>[----------]</td>
</tr>
<tr>
<td></td>
<td>94</td>
<td>[reach him]</td>
<td>[----------]</td>
<td>[----------]</td>
<td>[----------]</td>
</tr>
<tr>
<td></td>
<td>68</td>
<td>[reach him]</td>
<td>[----------]</td>
<td>[another human being]</td>
<td>[name]</td>
</tr>
<tr>
<td></td>
<td>163</td>
<td>[reach him]</td>
<td>[a piece of music]</td>
<td>[another human being]</td>
<td>[name of the disease]</td>
</tr>
<tr>
<td></td>
<td>193</td>
<td>[reach him]</td>
<td>[a piece of music]</td>
<td>[another human being]</td>
<td>[name of the disease]</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>[reach him]</td>
<td>[a piece of music]</td>
<td>[another human being]</td>
<td>[name of the disease]</td>
</tr>
</tbody>
</table>

Table 5: Average values for all students’ use of key words and phrases

<table>
<thead>
<tr>
<th>Paired sample t-test of number of key words used</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean student score</td>
<td>2.35</td>
<td>13.29*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average number</td>
<td>2.976316</td>
<td>3.607895</td>
<td></td>
<td></td>
</tr>
<tr>
<td>variance</td>
<td>N</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P (T ≤ t) one-sided</td>
<td>0.000527</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference between pre- and post-test scores (P<0.01)

Figure 2  The mean results for all students for Question 1
10. Discussion

The results indicate that, in general, our English teaching method that combines use of a movie-based CALL system and discussion of ethical issues improved the students’ English listening comprehension and their understanding of controversial medical and nursing issues.

The cooperating doctor (N.Y) stressed that there are no clear answers to these three themes which contain ethical problems (the issue of experimental drug (question 1), human rights issue of disabled patients (question 2) and emotional involvement of medical professionals (question 3)). Therefore, medical professionals and would-be professionals need to respond to each case on a case-by-case basis. The doctor also maintained that the most important thing
for students studying nursing or medicine was to have clear ideas based on their own learning. Having opinions on such a difficult issue in English can be considered as one of ESP approaches. In determining the development of the students’ thought on such ethical issues, we will continue to use the method we employed in this study.

Usually, movies are used in English listening activities. In this study, however, we showed the development of the students’ thoughts on nursing ethics as well as their listening skills through movie based CALL approach.

We observed that the movie was the strongest factor in sustaining the students’ interest and helping the students engage in English study. The use of this movie, “Awakenings” was meaningful in that it emotionally addressed the nursing students to explore the issues.

The CALL system was also effective as it enabled the students to view the scenes in question repeatedly at their own pace. As teaching materials, English movies are fast and overwhelming, but the aid of various functions of tailor made CALL systems such as SMILE for ME make the movie materials more approachable. Letting the students focus on selected scenes on CALL system is effective in getting a result in a limited period of 90 minutes. There are movies that can be used for nursing students, so we will continue to explore ESP themes in such movies for our next CALL research.

Acknowledgments

The authors are grateful to Dr. and Professor Naoki Yoshiyama (Niigata College of Nursing), for his professional advice on creating questionnaire.

References


Appendix

Appendix 1. The main features of this system SMILE for ME are as follows.

- Students fill in the blanks in each line using window 1. · Their answers will be reflected in window 2 and captions are displayed in a separate window 3. · Captions with blanks can be synchronized with the movie, giving students the chance to make sure their answers are correct while listening to the movie at their own pace. · Window 4 shows the functions that allow students to choose (i) speed of the speech using the speed control function and (ii) repetitive listening using the loop function. Thus, student can train their listening skills at their own pace and according to their English levels.

- They can also choose a scene from several scenes to concentrate on, enabling them to maintain their levels of interest. Also, after concentrating on their scene of choice, they can pause, store a record of activity to date, then resume the activity later from where they left it.

Appendix 2. Ethical questions

Question 1. "The number of experimental subject should be increased to promote introduction of new drugs." / I agree very much / I agree / I do not know / I don’t agree / I don’t agree at all.

Keywords (keywords for Q2-3 are omitted for brevity): *新薬治験（臨床試験）Clinical trial *医師の裁量権 discretionary powers of the doctor *被験者の自己決定権 right of self-determination *インフォームドコンセント informed consent *安全性 safety *副作用 side effects *薬害 chemical injury *有効性 effectiveness *(独断的)投与量の増加 arbitrary increase of medicine

Question 2. "It is wrong to give the mentally ill patients freedom to be on his/ her own even for a short time." / I agree very much / I agree / I do not know / I don’t agree / I don’t agree at all.

Question 3. "Medical and healthcare professionals should not be deeply involved with the patients emotionally." / I agree very much / I agree / I do not know / I don’t agree / I don’t agree at all.

Appendix 3. Details of each of 6 movie clips addressing an issue of nursing ethics.

Clip 1: Clinical trials are about to be done and discretionary powers of the doctor who decides the dosage of medicine arbitrarily are depicted.

Clip 2: The patient’s recovery process is explained in medical terms.

Clips 3, 4: The patient’s romance with a woman is described. This encounter led to the patient’s strong desire to leave the isolation ward to be free.

Clip 5: The patient demands to be on his own but his wish is rejected because of his disease and side effects.

Clip 6: All patients gradually return to the original unconscious state. The doctors and nurses in charge reflect on what they have done for the patients.