Poster Presentation Sessions in the Technical English Classroom

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Introduction

In an effort to keep up with changes in both technology and education, foreign language education at Nagoya Institute of Technology and other technical colleges around Japan has been changing over the last few years. At Nagoya Institute of Technology, the introduction of Technical English (TE) a few years ago as a subject into the language curriculum was a first step in satisfying the specific language needs of technical students. The creation of TE was followed by the publication of two books by NIT staff which attempt to answer the specific needs of students at NIT — *Technical English Techniques* (Robins et al., 2000) for second year students and *Humanity and Technology* (Cullen, 2002) for first year students.

This paper examines recent efforts to continue this positive direction by introducing project work into the TE curriculum. In particular, we would like to report on a poster presentation session as an example of the kind of project that may become more common in TE. After describing the carrying out of the project and explaining its limited success, we will provide an analysis based on the recent theoretical framework of task cycles and propose that this framework may be useful in the design of TE projects at NIT.

Rationale

Technical English is a relatively new subject on the curriculum of Nagoya Institute of Technology and many teachers continue to teach the class in the 'traditional' way, that is by memorization and comprehensive testing. Although there is clear value in these methods in providing a solid basis for reading and translation skills, they are often found to be inadequate for teaching the wide range of communication skills needed for today's international arena (ex. Brown, 1993). As Widdowson (1998) points out, an important feature of communicative language teaching is its focus on learning language through language use, preferably in realistic situations where students feel a *need* to use English. One way of achieving this realistic language use is through project-work, so we decided to investigate more fully when one of the part-time teachers at NIT, Pudwill, proposed a project of this nature.

Pudwill's main objective in carrying out project work was his belief that linking classroom activities directly to the content of the course would provide greater motivation for students and lead to greater realistic use of language in the technical sphere. With this in mind, over a period of three weeks, he carried out a poster presentation session with his two Technical English classes. Students were divided into groups. Together, they carried out research on a topic related to their area of specialization and designed a poster to explain this research. This poster was subsequently used as a presentation aid in a presentation.

The idea for poster presentations came from Pudwill's own background as an engineer and his experience in technical narration. When he was studying engineering in college, his professors often had students present their designs, fabrication processes, and other technical subjects to others in the class. In his words:

> One particular presentation I remember was to explain how a transformer for a model railroad train worked. Even though it was a relatively easy subject, it was difficult for me to organize, diagram, and present the information.

After graduating from college, he realized the importance of this skill.

> During my days as a designer for an electric heater company, I presented an electric heater I had designed to a group of the company's salesmen. I was so nervous that I think I was sweating blood, and I really messed up the presentation.

More recently, in Japan, he has narrated numerous technical videos that have either attempted to sell to others (ex. new machinery used for weaving or metal milling machines), explain (how to use these machines), or teach (ex. in-house repair video manuals). He has also worked with many professional engineers in Japan who were required to write explanation manuals (how to use cameras, machinery, etc.), descriptions (product specifications, tolerances, etc., such as those used by sales-engineers), reports that are written for testing and governmental regulatory agencies (Underwriters Laboratories in the USA), or combinations thereof. These are all clear goals which must be achieved for the engineer to carry out his work properly. In general, each job is based on a very specific content area.

Pudwill usually works directly with engineers on these projects. These engineers are often very knowledgeable about the topic, but have problems effectively communicating the topic. Luckily for these engineers, he also has a technical background and can understand many of the technical areas as well as the language problems.

Thus drawing on his own training and experience, Pudwill knew how difficult it is for an engineer to organize a topic well enough to describe it to others, even in one's own language. Recognizing that this year's engineers were last year's students, he wanted to give the students experience researching and reporting on technical topics.

He also wanted to give the students experience in an exhibition or conference atmosphere. In the future, students will often represent their companies as engineers in either a technical sales or buying capacity. Generally, participants at these exhibitions are other engineers or are otherwise technically inclined, similar to what we have in our classrooms. Exhibitions are also effective and motivational activities for large groups of learners. This view was shared by Ford (1999) who carried out a similar exhibition style activity in his classes. As one learner described it: "It was kind of like visiting a lot of stores." From a language learning point of view, this kind of exhibition maximizes communication time for all students by ensuring that everyone is either speaking or listening to English all the time in a realistic situation with clear goals.

Pudwill felt that students could accomplish several objectives simultaneously – research and report on a technical topic, experience a technical exhibition or conference and learn English more effectively through experiential practice.

Procedure

The poster presentation project was carried out over a period of three weeks. The steps carried out in each week are explained below. Comments from a video recording of the process are interspersed with the explanation to allow the reader to get a fuller picture of the process.

Week 1

In the first week, some of the lesson time was used to explain what was expected, to get the students into groups of two to four people and to decide the topic.

He felt that students of a second language should study topics in which they are interested and enjoy. In his words:

> My hobbies are photography and technology, so I often read brochures and articles about cameras and computers. In addition to the technical terms, I have learned the language associated with these subjects.

With this in mind, he did not specify the presentation topics. He felt that the groups should choose topics in which they are interested and already have an understanding. The topic was not limited to how a product works. Groups were free to choose any topic related to technology. Topics could include, for example, the

manufacturing process of a pencil, the difference between AM and FM radio signals, or the life cycle of aluminum. However, it is important to limit the scope of the topic. Too much content is hard to understand, organize, and present. Students will often choose a topic that is too broad, such as how a camera works. It is much better to explain only how the auto focus works or to describe the materials used in film. During the first week, it is important for the groups to check with and get approval from the teacher to make sure the subject is sufficiently limited.

At the end of this lesson, students were given their homework. For the second week, the students were to bring materials to prepare in making their posters. Such materials could be presentation construction paper and magic markers for diagrams or pictures. Students were advised to go to Tokyu Hands or a similar department store where they could buy presentation material kits. It was also suggested that they could bring a sample of the actual product (pieces of a fluorescent lamp, a brake shoe and drum, a circuit board, etc.)

Week 2

After taking attendance, the students were allowed to go to the library or the computer facilities to carry out research. Class time may be the only opportunity during the week that the group members can get together to research and prepare. While the research was left up to the students, the Internet was recommended as an excellent source of information. English information is readily available and there are many diagrams, photos, and other printable presentation graphics. Since this material is only going to be used for educational purposes in classroom presentations, there are no copyright restrictions on using these materials. However, the research methods were left up to the students. Developing independent research skills is important as students will have to carry this out themselves when they leave college and enter the job market.

It is probable that many students researched Japanese sources because such sources are more readily available and they may have experience researching Japanese sources for their specialized classes. Also, because it is their native language, it is easier for them to sift through all the information. Of course, they must be ready to present their topic in English, so they will probably have translated some information. While translation is often considered to be contrary to the principles of communicative language teaching, intuitively it seems certain that translation has considerable value, especially with appropriate teacher guidance.

Pudwill considered having the students make a biography of their sources, but decided against it because of the extra work involved and because he wanted to retain the emphasis on an oral presentation, rather than on a written paper. In future, however, he raised the possibility of adding another week to the presentation time to give the groups time to document their sources and possibly do more written work.

By the completion of this research, students should have investigated the "what's" and the "why's" relevant to their topic. Each group should also have prepared a set of about ten key words and ten questions that the other students can ask them.

After this class time research, students need to spend additional time outside class in preparation. The amount of time taken is illustrated by the following dialogue:

(Looking at a digital clock - one of the best projects)
C: Did this take you a long time?
S: About a half hour.
C: (to second student) And how long did it take you?

The second student obviously had taken no part in the work. This shows us one of the problems of group work, especially when it is conducted outside class. It is very difficult to ensure that each member does a roughly equal share of the work. This can lead to problems in assessing students in project-work of this type and is an area that requires serious thought. Perhaps, having students assign specific responsibilities to each member of the group is a feasible option.

Week 3

On the third day, presentation day, students were first given a few minutes to finish off their preparation.

Pudwill's own words describe the scene well:

> Now, I'm giving them about 5 or 10 minutes to finish their presentations. Then, I'm going to have them set up their displays or whatever they have throughout the room. Circle around the room, make it like a exhibition center, something like you would see at Fukiage Hall. Next, each group sets up their display somewhere in the classroom. Students use tape to stick their posters on the walls of the classroom. Half of the students from each group act as 'guests' or 'customers', and the other half act as presenter of their group's project. The guests took notes on the other groups projects to keep them involved. An exhibition should be a 'two-way street' to ensure active participation.

And later in his instructions to the students:

> There should be two or three people for each display. One of you, please sit at the display. The other two people, please get a piece of paper so that you can take notes. We want one person to explain the fluorescent lamp, for example. Two people to walk around and ask questions about other displays. Take notes, take one or two notes of each display. Ask questions. We have questions. We have key words. As much as possible, use English.

In the second half of the lesson, the students who were guests become presenters and vice versa. The next section will examine various aspects of the students' performance in the poster presentation session.

Student performance

Topics

Because of the importance of the connection between content and language learning, the choice of topic was very important for the students. All students were required to choose a topic which related to their area of specialization in some way. Students who chose a narrower topic generally performed better than those who had chosen a broad one.

> Many of the topics, I thought were pretty good — television transmission, let's see, this one is for radio, the difference between FM and AM radio. I think the key point is to not, for example, radio is too big a topic. It should be separated into AM and FM only — keep the topics very specific.

Posters

We have put photographs of several of the posters onto a webpage to give readers a better understanding of this project. These can be accessed from the webpage: <http://www.edsys.center.nitech.ac.jp/lang/a07edc04/Publications/>. As can be seen in these photographs, there is a wide variation in the amount of graphics and text used in different posters. Although posters with a large amount of text looked impressive and showed signs of work outside class, they were detrimental to performance in presentation because students tended to simply read the text straight from the posters. Conversely, the posters that had only graphics forced the students to use their own words in explaining and thus led to more natural presentations.

> I think that the problem of many of these displays is that they have too many details in their displays. I think, next time, I will use only pictures or graphs, and main titles. I think that will be more useful. The problem now is that they are getting very wrapped up in the details and they forget the main points.

Realia

Several of the most successful presentations were those in which students brought in real objects (realia) to help them explain their topic. Some groups were quite ingenious, bringing items such as a broken transistor radio and end caps to a fluorescent light bulb to be used as cheap but effective presentation materials. This was not specified in the instructions, but many students realized that real objects have a very strong explanatory effect.

> Of course, there are many things that are too big to bring to the class. For example, a microwave oven. How does a microwave oven work? It's impossible to bring a microwave oven, so a diagram is necessary. But some things, such as a radio — you can see one down here. This is very easy to bring and it

makes for a good display. Other things such as "How is a tyre made, what materials are in a tyre?" — I think that they could bring a piece of a tyre, a cross-section of a tyre would not be so difficult. A big tyre is too big and difficult, but a piece of one is possible.

In fact, the use of realia could be extended into a new project, separate from the poster session. In a traditional learning activity called "Show and Tell", students bring an object that is important to them into the classroom and talk about it. In the Technical English classroom, this could be adapted into a presentation about an object related to their specialization.

Use of English

As this is an English class, it is rather pointless if students make successful presentations, but fail to use or learn English. In this area, it was clear that the teacher needs to focus more on language use.

C: I was wondering about the role of the English in this. Do you think it gives students a lot of opportunities to use English?

P: I can see that this is more of an industrial or a technical project rather than an English project. I think if we keep it simple and try to keep the English element involved, it will be a much, much better project.

Ways of increasing the focus on language use are discussed further in the analysis section. It was interesting to note that language problems can occur for the teacher as well as the student. One potential problem with projects of this nature is that the content area usually lies outside the teacher's area of specialization. Even when dealing with a standard technical English textbook, teachers can face a crisis of confidence as they try to come to terms with a range of new vocabulary and technical concepts that are alien to the normal liberal arts background of language teachers. As more projects are introduced into the Technical English course, there is a need for support for teachers.

Presentation skills

Perhaps unsurprisingly, most of the problems experienced in the poster presentation session were presentation problems rather than language problems. Of course, these two issues are closely related since it is difficult to make a presentation without a good grasp of the language. Some of these problems are listed below:

- Not enough preparation
- Too many hesitations
- Too much looking down; generally, poor body language
- Reading too much; reading everything.
- Not enough reference to the poster
- Too much writing on poster
- Not speaking loud enough.
- Student does not respond well to questions
- Not able to explain main points

Most of these can be summarized by the single problem — a poor sense of audience. Most students did not consider whether the audience could hear and understand them. It is important to emphasize to students that a presentation is a useful form of communication only if the listeners can understand. Most students have had no practice or training in presentations, even in their native language. Ideally, students should get more practice at senior high school, but barring major changes in the curriculum, this is an unlikely prospect. Instead, we must face the problem ourselves at NIT by linking content, presentation skills, and language in the Technical English classroom.

There are various ways in which a better sense of audience can be developed. Firstly, our strongest recommendation is to keep the writing on the posters to a minimum. Only the main topics should be written on the poster. This gives the presenters something to talk about and the guests something to listen to. Too many times, the groups wrote too much on the paper, and they would just read from the paper. It sounded stilted, and there was no need for the guests to listen because they could read. On the other hand, only graphics can also make it difficult for a listener who is not familiar with the topic. Writing the titles of the main sections of the presentation on the poster makes it much easier for the listener to grasp the main points and to follow the flow of the presentation. In

addition, it helps the presenter to plan his presentation and to avoid drifting out into specifics while missing the main points. Finally, another suggestion we could make is to keep the topics specific so there is not too much information. For example, one group chose to explain how a camera works, but they got lost in such a deep subject. Another group described the workings of the auto focus system with far better results because it was more specific.

Analysis

If we had to identify the most important single element of this project, we could say that it is the realistic linking of the students' area of specialty to their learning of a foreign language. Without consciously realizing it, Pudwill has entered into an area that has seen a lot of research in the last few years. There have always been teachers who used a specific topic area such as literature or culture to help students to learn more efficiently, but recent cognitive models of language learning have stressed the importance of meaningful content over the decontextualized language structures and functions which are the focus of many traditional classrooms. Content-based instruction (CBI) has become a popular topic at language teaching conferences in the last few years, and the research has begun to show that CBI may be more successful than other methodologies in simultaneously teaching both language and the content area (ex. Benesch, 1998). At the level of the classroom, the feeling of many language teachers that language learning has been too distant from the realities of students life is illustrated by the exchange below:

> C: Do you think that tying the content and the language learning together is a useful idea?
> P: Oh certainly, make it real.

The project described in this paper is also representative of another trend in language learning research — task-based learning. In the words of Willis (1998), a task is "a goal-oriented activity with a clear purpose." In language learning, we need communicative tasks which she defines as "achieving an outcome, creating a final product that can be appreciated by others." Simple examples include compiling a list or solving a problem. Longer tasks include designing a webpage or the poster session described here.

Much of the justification for using tasks in language learning is based on the work of the linguist, Halliday. Halliday (1975) sees the learning of grammar, vocabulary and other aspects of language as a response to a need to express meaning. He sees language as functional. In other words, we will learn the language if we need to learn it. By engaging in communicative tasks, learners realize that gaps exist in their language abilities and so develop a need to learn language. The teacher can fill this need by having students pay attention to the language in samples of competent language users. As students notice the correct language forms, they will become more accurate in their own language use. Thus, there is a movement from language fluency to language accuracy. This is in sharp distinction to other forms of syllabus which emphasize movement in the following direction — from accuracy to use. For example, a structural syllabus ensures that learners practice language forms in controlled drills before allowing them to use these forms in meaningful language use. In contrast, a task-based syllabus asks learners to communicate with whatever resources they have. In doing so, they realize their language needs and in the subsequent language work, they are able to focus on the wordings which they need for the meanings they want to express.

To help teachers and material designers to produce and carry out effective tasks, Willis (1998, 2000) developed a task-based learning framework which can be used in designing pedagogic tasks. For example, Rooney (2000) describes the use of this framework in his redesign of a traditional structural syllabus textbook into a task-based syllabus. Willis' process is described below in slightly adapted form.

1. Pre-Task Phase

The teacher introduces the topic and prepares the learners. This preparation could include brainstorming, preview of useful vocabulary, or a sample of competent language users doing a similar task.

2. Task Cycle

Task: Students carry out the task in pairs or small

groups using any language resources that they already have without worrying about making mistakes.
Planning: Learners prepare some form of report (oral or written) for the whole class. Because it is public, students will focus more on accuracy.
Report: Some/all groups present their groups to the class.

3. Language Focus
At this point, the teacher introduces a sample of fluent language users carrying out the same task.
Analysis: Students examine the wordings in the sample which expressed the meanings used to carry out the task.
Practice: Having identified these wordings, the teacher carries out controlled or semi-controlled practice.
4. Follow-Up Task
Finally, the students should carry out the same (or a similar) task with new partners to ensure that they have acquired the necessary language.

Was this project a 'task'?

If we are to accept Willis' framework, we need to ask if the poster and presentation session described in the first half of this paper conformed to the necessary structure. The deviations from the framework are summarized below in Table 1 and explained in more detail below.

Table 1

Pre-Task Phase	Included, but insufficient.
Task Cycle	
Task	Not included
Planning	Included
Report	Included
Language Focus	
Analysis	Not included.
Practice	Not included.
Follow-Up Task	Not included.

As can be seen, the poster session in its current form does not conform well to the framework. This is not surprising as it was not designed to do so. However, it is interesting to examine how the deviations from the framework show up in Pudwill's comments.

Pre-Task Phase
The same project was carried out with two different classes in consecutive time periods. After the first time period was finished, Cullen interviewed Pudwill about his impressions.

> C: Larry, what was your impression of the students' work in the first class.
> P: I was a little bit disappointed because I thought the presentations would be better, I thought the materials would be better. Unfortunately, they weren't ready yet. They didn't have everything prepared. They were still writing in the classroom.
> C: How much preparation time did you give them?
> P: I gave them two weeks.
> C: During?
> P: Two class periods plus the full week, of course.
> C: So that was their homework, too.
> P: Yes, that was their homework also.

These students in the first class were not oriented well enough in the pre-task phase. However, this was not simply a matter of time since both groups had the same preparation time. Student performance was also closely related to teacher expectations and preparation. After the second class, we hear the following:

> I think they're very good. This second class is very good. Unfortunately, well, maybe better, I prepared the second class better than the first, so their displays are much, much better. I expected many more things from the second class and they performed accordingly.

Many of the other problems cited above are also due to insufficient preparation in the pre-task phase. In future, it would probably be better to show students a video of a competent speaker making a poster presentation. Another alternative was mentioned by Pudwill:

> I would like to have a class at Fukiage Hall for a real-life experience of such an exhibition as preparation for the next in-class exhibition.) These conferences/exhibitions are extremely common and usually subject specific, and I remember how overwhelmed I was at the first one I attended.

Task Cycle

The *task* stage was not included, but it would be an easy addition. Rather than asking students to go straight into the *report* section, the teacher could ask them to explain their posters to each other in pairs or small groups. Following this, they could help each other in the *planning* stage before moving onto the *report*. By combining resources, the *planning* stage can become much more fruitful. It is clear that these students went straight to the report stage. This deprived them of the opportunity to attempt the language privately before a public display. Including the omitted stages would help to solve presentation problems as well as language problems.

Language Focus

Again, this stage was omitted, but could be easily added. The teacher could show the same video of competent speakers carrying out the task that was shown in the *pre-task* phase, but this time students could be given cloze exercises or listening exercises to help them notice which wordings were being used to express the required meanings.

Follow-Up Task

The follow-up task could use the materials that the students already have, but to add an interesting twist, students could be asked to change posters with another person whose presentation they had heard. Time should be provided to allow students to ask each other questions to ensure that they understand everything, and then students can re-do the task in small groups with the other person's poster.

Conclusion

The poster presentation project provided an excellent opportunity for students to link their area of specialization with their language learning and to use English in a realistic situation, but several areas of the project need to be refined. By adopting the task-based learning framework, it would be possible to increase the focus on language learning, improve presentation skills, and deepen the knowledge of content areas. As Technical English at NIT continues to improve, task-based learning may prove to be a very important element of students' learning.

References

Benesch, Sarah (Ed.). *Ending Remediation: Linking ESL and Content in Higher Education.* Washington, DC: TESOL, 1988.

Brown, H. D. (1993). *Principles of Language Learning and Teaching.* Prentice Hall Regents, Englewood Cliffs.

Cullen, B. (2002). *Humanity and Technology.* Intercom Press, Fukuoka.

Furmanovsky, M. (1997). Using Posters in Content Courses. *The Internet TESL Journal*, January 1997. <http://www.aitech.ac.jp/~iteslj/Lessons/Sheffner-Posters.html>

Ford, K. (1999). The Poster Preview Task. *The Language Teacher Online*: 23:01. <http://langue.hyper.chubu.ac.jp/jalt/pub/tlt/99/jan/sh_ford.html>

Willis, J (1998). Task-Based Learning: What kind of adventure. The Language Teacher 22/07.

Willis, J (2000). A Holistic Approach to Task-Based Course Design. The Language Teacher 24/02.

Halliday, M (1975). Learning How to Mean. London: Edward Arnold.

Nebila, D.H. (1999). Presentations for science students. *The Internet TESL Journal*, August 1999. <http://www.aitech.ac.jp/~iteslj/Techniques/Dhieb-ScienceProjects/index.html>

Robins A., Matsuura S., Deguchi Y. and Seguchi M. (2000). *Technical English Techniques*, Gakujutsu, Tokyo.

Rooney, K. (2000). Redesigning non-task-based materials to fit a task-based framework. *The Internet TESL Journal.* <http://www.aitech.ac.jp / ~iteslj / Techniques / Rooney-Task-Based.html>

Widdowson, H.G. (1998). Communication and Community: The Pragmatics of ESP. *English for Specific Purposes* 17 (1).