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ABSTRACT

The development of a comprehension-based graduate-level intensive course and instructional materials in English for Special Purposes is described. The 2-week course and materials were designed for visiting Latin American faculty members in agricultural education. Course goals were to improve participants' academic English proficiency, to prepare them for large amounts of specialized reading, and to provide opportunities for discussion with professors and other students. One concern was the need to hold the participants' interest while language skills were developed. The resulting seminar had the theme of "Problems in the Transfer of Technology: Focus on Latin America," a subject of general interest and one for which local resources were readily available. The course consisted of lectures by specialists, informal discussions, follow-up language-related activities, readings, laboratory work, and field trips. The readings used were authentic and drawn from a variety of sources, but in place of traditional reading exercises, activities for previewing, picking out main ideas, determining central themes, drawing logical conclusions and inferences, and developing opinions were used. Responses of students and guest lecturers were very positive, and it is concluded that the course design is an attractive alternative for advanced adult students of English as a second language. (MSE)

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Problems in the Transfer of Agricultural Technology: An ESP Program

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Abstract

This paper presents an application of the theories of comprehension-based teaching to materials development in English for Academic Purposes. The program described here was developed for Latin American faculty members in the agricultural sciences who were about to enter graduate programs in the United States. The course was designed to build upon participants' existing skills in reading and listening while orienting them to graduate coursework in North America, through provocative topics related to their fields of study. Essential elements of the program were 1) team-teaching, using ESL faculty to support lectures given by specialists in the problems of the transfer of technology, 2) authentic reading materials supporting the lectures, and 3) a course theme which was intellectually stimulating to participants and united them despite their differences in English proficiency and their varied academic disciplines.

Introduction

Teachers and administrators in Intensive English Programs face a common problem: students, after attending daily language classes for a semester or two, are anxious to begin academic courses, although their English still lacks the polish demanded for academic admission. Traditional academic English or study skills courses are, at best, an imperfect solution in satisfying the students' need for authentic coursework. An alternative is proposed by Krashen (1985) to provide "sheltered" classes in which content, not language, is the focus but which simplify language somewhat to insure comprehension. This proposal grew out of Krashen's theory of second language acquisition, the input hypothesis,

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which states that we acquire language when we understand messages and that, when second language learners receive sufficient comprehensible language input, the necessary grammar is automatically provided and need not be taught explicitly. Earlier, a number of proponents of comprehension-based language teaching made virtually the same argument: that comprehension should be central to all language teaching (Winitz, 1981).

One advocate of this theory, Leonard Newmark, suggests that any number of methods and techniques for the teaching of language can be successful, but that three components must be present in insure optimal learning: 1) the learner's attention must be on the language, 2) provision must be made to enable the learner to attach meaning to instances of language, and 3) a sufficient number and variety of expression-meaning combinations must be present (1981). These three components are the essence of comprehension-based language instruction.

In spite of its supporters, however, comprehension-based instruction is far from being standard practice in ESP classrooms. As MacKay and Mountford (1978) remind us, most ESP teaching materials have reflected the particular descriptive view of linguistic structuralism. This has led to language teachers focusing on lexical items and syntax most common to the specialist topics with which their students are concerned (Widdowson, 1984). Thus, many advanced ESP classes are near look-alikes of those in lower level general ESL/EFL, with readings followed by exercises designed to practice the structures and lexicon for a particular field.

Alternatives do exist. Content courses are a means of getting beyond the artificiality of the traditional ESL classroom where the medium, rather than the subject, is the message. Krashen (1985) argues that subject-matter classes may be superior to the language class for language acquisition for their ability to supply quantities of comprehensible language input. Schleppegrell (1986), for

example, has shown the value of comprehension-based instruction for advanced learners specializing in economics. Our project, a comprehension-based "sheltered" course which focused on an agricultural theme, grew out of this earlier work.

Description of the Program

The Intensive English and Orientation Program at Iowa State University was asked by the Latin American Scholarship Program of American Universities (LASPAU) to conduct a two-week special session for fifteen scholars, all of whom were Spanish-speaking postgraduates in the agricultural sciences. As a group, they had twelve different fields of study, including agricultural engineering, ecology, animal production, and rural sociology. TOEFL scores in the group ranged from 433 to 567 with a mean score of 485. Prior to the special two-week session, all but one student had had basic and/or intermediate courses in ESL, during which six demonstrated relatively poor listening and speaking skills in English. After eight additional weeks of advanced English instruction, all would be entering university graduate programs.

Our goal was to help prepare this group for graduate study in the United States, not only by improving their academic English proficiency, but by providing a taste of graduate study including its heavy doses of specialized readings and opportunities to discuss and debate ideas with professors and fellow students. To accomplish this, we attempted to simulate a seminar centered around the theme of "Problems in the Transfer of Technology: Focus on Latin America." We chose the topic on the advice of an agriculturist for its breadth and timeliness as well as its relevance to the students' backgrounds. The theme was also ideal because of the resource persons we were able to call upon at Iowa State University. Of the six lecturers, five were experts in

technology transfer. All expressed an interest in Latin America, with five of the six having conducted extensive research or development projects there. Professors from sociology, microbiology, philosophy, economics, and agricultural engineering, and an administrator from the college of agriculture lectured on various aspects of the course theme and provided readings in support of their sessions.

Program Syllabus

The objectives of the course, which were outlined at the first class meeting, were to improve students' listening comprehension (by providing opportunities and support in listening to lectures, participating in discussions with professors during class and at daily coffee breaks, viewing and discussing films, and taking part in field trips), reading skills (by providing authentic published articles supporting lectures and public relations materials and assistance in comprehending them), and speaking skills (by providing models of academic presentations and by providing opportunities to listen and participate in discussions and oral presentations).

Students received packets containing: 1) the goals and objectives of the course and student responsibilities, 2) a daily agenda, 3) bio-data for all guest lecturers, descriptions of field trips, and readings to complement each lecture, 4) name tags to be worn during morning sessions.

A schedule for a typical day was:

8:30 ESL preview of lecture
 9:00-10:00 Lecture by guest speaker
 10:00-10:30 Coffee break and informal discussion with guest speaker
 10:30-12:00 ESL follow-up
 1:00-2:00 ESL reading

2:00-3:00 Films/independent lab work

The guest lecturers and the ESL teachers functioned as a team¹, with the former providing reading materials, giving the lecture, and participating in follow-up discussion. ESL teachers previewed lectures based upon information received from lecturers; audited lectures, noting idioms and critical vocabulary for use during follow-up sessions; and assisted students with readings by monitoring their comprehension via questions, providing strategies for comprehension, and eliciting discussion of important points.

Readings were studied and discussed prior to lectures on the same topic. In this way students built up appropriate vocabulary as well as knowledge about the lecture, thereby increasing the likelihood of understanding the lecture. As might be the case in a graduate seminar, participants sometimes felt overwhelmed by the amount of reading. To tackle this problem, ESL instructors guided students in the skills of skimming, scanning, and deciphering vocabulary without use of the dictionary.

Following the preview of the lecture by the ESL instructor, the guest lecturer presented his talk using a traditional lecture format, while typically encouraging questions and comments from the audience. Lectures were videotaped to allow for optimal ESL follow-up. During coffee breaks students and lecturer were encouraged to mingle and discuss ideas less formally. Often, enthusiasm was so high by this time that the lecturer continued to answer questions well into the period which had been designated for ESL, so the ESL instructor continued the discussion after the lecturer left. At this time the video was available for instant replay of segments that may have been incomprehensible to some or otherwise worth repeating. Afternoon sessions, in addition to the reading class, presented films related to issues in the course and provided students with the opportunity to review videotapes of previous lectures as an

aid to building comprehension.

Since one of the aims of the mock seminar was to increase participants' confidence in presenting oral reports, delivering a 10-minute talk was a course requirement. Talks typically dealt with some aspect of the seminar theme in the context of the presenter's own country. Students were given written guidelines for the presentation (included in Appendix A) and evaluated on various aspects of delivery and content as well as given overall comments which pointed out the best aspects of the presentation and made suggestions for improvement.

Two field trips relating to the seminar theme were also scheduled. The first was a tour of Pioneer Seed Company, and the second was a visit to a large family farm. In both cases participants received related written materials both before and during the visits.

In summary, participants were exposed to a considerable amount of language on a particular theme on which they had appropriate background to build. Samples of formal and informal, oral and written, impromptu and prepared language were included. While participants were encouraged to interact with speakers and with one another, they spent the greatest proportion of their time receiving linguistic input. This was made comprehensible by ESL support sessions and through opportunities for individuals to review lectures via videotape.

Program Materials

The readings were authentic -- that is not designed specifically for ESL-- and were from a variety of sources: texts, extension pamphlets, magazines, and public relations material. Significantly, ESL support did not include traditional exercises on the readings, but rather assisted students in previewing, picking out main ideas, determining terms of central importance, drawing logical inferences and conclusions, and developing opinions in relation to the text. Materials were developed to help students work through these

critical areas. An example taken from a worksheet designed to accompany the reading from the field of rural sociology entitled: "How Farm People Accept New Ideas" is given in Appendix B.

Conclusions and Implications

The outcome of the course "Problems in the Transfer of Agricultural Technology: Focus on Latin America" suggests that comprehension-based materials are worth consideration with adults whose backgrounds and needs, though different, can be brought together under a common theme. This modified version of Krashen's "sheltered course" (1985) focused on content which was not only relevant, but intellectually stimulating for instructors as well as students. This motivating factor insured that students were engaged in the lesson, receiving instruction in English implicitly rather than explicitly, and gaining useful knowledge that could be applied to their fields.

The seminar was evaluated positively by participants, most of whom reported being tired of their regular classes and anxious to move on to graduate courses in their disciplines. As indicated in Table 1, on a five-point scale, no one ranked the overall usefulness of the seminar lower than four, with five being "excellent." More than half of the participants saw the seminar as most beneficial in improving their listening comprehension, but the majority also ranked it as good in improving their speaking abilities, and good or excellent in improving their ability to read authentic academic materials. The same pattern held for the value of the seminar in acquainting individuals with academic life in the United States and for increasing their understanding of problems in the transfer of technology. (Insert Table 1 about here).²

Like Schleppegrell (1986) we agree that the successful development of courses such as ours depends upon the cooperation of subject area specialists. In addition to their obvious work in choosing materials, presenting lectures,

TABLE 1

Participant Evaluation of the Seminar
 "The Transfer of Technology"
 (N = 13)

	Excellent		Fair		Poor
	5	4	3	2	1
1. The overall usefulness of the seminar was:	38%	62%			
2. The benefits of the seminar in improving my listening comprehension were:	54%	46%			
3. The benefits of the seminar in improving my speaking ability were:		69%	31%		
4. The benefits of the seminar in acquainting me with and improving my ability to read authentic academic reading were:	31%	46%	23%		
5. The benefits of the seminar in helping me get acquainted with academic life in the U.S. were:	23%	54%	23%		
6. The benefits of the seminar in improving my understanding of problems in the transfer of technology were:	23%	54%	23%		

and discussing ideas with students, they were essential in giving the course the credibility that traditional advanced ESL classes often lack for students. Because lecturers were actual professors speaking about research in which they were deeply engaged, need for the usual role-playing of academia inherent in ESL classes was eliminated. Dialogs with professors were no longer hypothetical, but real. Several students commented at the end of the session that they now had greater confidence in their ability to comprehend a variety of accents and speaking styles--something not gained in the protective environment of general English classes in spite of our efforts to expose them to a variety of tape-recorded speakers. In observing the steady increase of student participation in discussion over the two weeks, we also hypothesized that these students would not hesitate to participate in discussions with professors and colleagues in their graduate programs later.

Both the guest lecturers and ESL staff were enthusiastic about the course. Guest lecturers mentioned taking pleasure in the positive reception they received from their audience--applause following their talks and probing questions during discussion. The strong Latin American interests of the lecturers made their task especially relevant for them as well as their audience. Likewise ESL staff, in addition to learning a great deal about an important area for many international students at our university, were able to do what they did best: provide linguistic support rather than be rather uncomfortable "experts" fields about which they knew little--the plight of too many ESF instructors.

The course model described here is an attractive alternative to traditional advanced ESL classes, particularly so, perhaps, for mature language learners who feel, in the words of one such student in an advanced level of our general English program, that "teachers treat us like children sometimes." Likewise, the

approach offers a distinct advantage over Krashen's "sheltered" course where subject-matter instructors are not ESL experts and run the risk of not being able to make themselves or their material comprehensible to their students. Certainly, in contrast to Schleppegrell's suggestion that comprehension-based courses "...may not be appropriate for a university level ESP program where development of academic skills is a primary objective," we can argue that this does not appear to be the case. Rather, such an approach, by engaging the audience through a stimulating and relevant topic, exposing them to large quantities of authentic language and supporting them in their efforts to make it comprehensible, is effective in a variety of contexts, including pre-university Intensive English.

Endnotes

¹ Team-teaching in this course differed conceptually from team-teaching in the usual sense. Content lecturers and ESL instructors did not plan and teach the course in tandem; rather, the former donated their time to make single presentations as "guests" in the course, while the latter aided not only in making these lectures and accompanying readings comprehensible, but were also responsible for the course as a whole.

² The short duration of the course made us skeptical of finding any measurable improvement in the language skills of participants. However, in addition to their own perception of improved skills, their instructors, who had contact with these students before and after the seminar, noted a significant change in the speaking abilities of some seminar participants, including a greater willingness to participate in class discussions. We believe these changes may well have resulted from skills acquired in the seminar. We hope to substantiate our

claims in the summer of 1987 when we plan to extend the course for ten weeks and to include pre and post tests to measure skill development.

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WORKSHEET-- "How Farm People Accept New Ideas"

1. General overview - Use pictures, titles, headings, etc., to make assumptions and predictions about the article in the following areas:
 - a. Who was this article written for (audience)?
 - b. What is the purpose or intention of the article?
 - c. Do you have any background or interest in this topic?
 - d. Could this topic be applied to your field of studies?

2. Organization, method of development
 - a. What is the main idea of the paper? Where is it found?
 - b. What do you predict the author will be doing in this paper?
 - 1) Arguing an issue
 - 2) Defining a term
 - 3) Explaining a process
 - 4) Comparing and contrasting different views
 - 5) Other

3. What does diffusion refer to in this article? Is it clearly explained?

4. What are the 5 stages of the process of acceptance?
 - a. In the awareness stage, which source of information is the most influential?
 - b. What is the most influential source of information in the evaluation stage?

5. What are some traits of individuals and families which affect the diffusion process? (See page 8.)

6. How can knowledge of this process be helpful? What types of people would be interested in knowing of this? Could this process be applied to groups other than farmers?

7. Do you think this kind of process really operates in the real world?

Does it treat the topic with wisdom and compassion?

Oral Presentations.

On Tuesday, June 3, or Thursday, June 5, each student will give a 10-minute oral presentation on a topic of his or her choice which relates to the general theme of the seminar, and additionally relates to at least one of the readings or speaker presentations. Each student will be expected to provide information from such outside resources as research articles, personal research/experiences as a scientist working in Latin America, news accounts, or interviews with other experts.

We suggest that you choose a topic as quickly as possible and discuss it with us before Friday, so that we can help you to determine if it is appropriate given the topic and time constraints. You might want to consider choosing one of the topics that most interested you among the readings and speaker presentations. Also, you will probably want to speak about a subject that you may already know something about; in this way, you could a) concentrate on finding a few good outside resources to lend statistics, examples, and credibility to your presentation, and b) spend the limited amount of time organizing a clear, well-thought out speech.

In an ideal short presentation, the speaker should quickly state the purpose or main idea of his/her presentation, develop the main idea with supporting information (specific examples, explanations, definitions, comparison/contrast), and conclude, perhaps giving a personal opinion in the closing remarks. The organization of the speech is meant to help the audience understand the speaker's main idea and support, as well as point of view. Typically there are three parts:

- I. Introductory remarks. Here you may give an overview of the material to be covered and briefly summarize the article or speaker presentation from the seminar that led you to this topic. You may want to explicitly state your main point.
- II. Body. Break the main idea(s) down and develop it, in a manner that brings the main idea into clear focus.
- III. Summarizing remarks. You should restate the main idea and its significance, and perhaps make clear your particular point of view and opinion on that idea.

You will want to speak from either an outline or from small notecards; good speakers don't read from a written script (although you may want to write out parts of it to help you prepare, and have long quotes or facts and statistics written down so as to be accurate). Also, feel free to use the blackboard, overhead projector, or other audiovisuals, as long as you don't depend on them to substitute for a well-developed speech. Be prepared to answer questions from your classmates for approximately five minutes afterwards.

Alternatively, you may choose to debate the pros and cons of a particular issue with a partner, taking a total of 20 minutes to present arguments and counter-arguments. You might want to debate the consequences of importing American technology in your field of study versus developing your own, or discuss the advantages and disadvantages of making a specific kind of research a priority in your country or community; each student should represent one side of the argument, pro or con. This format would be especially suitable for two students from the same country or from the same academic discipline. It would be a very good way to demonstrate a grasp of all of the significant issues surrounding the topic of technology transfer and development; also, it could prove an exciting listening experience the rest of us!

You will be evaluated on your presentation using these criteria:

- I. Delivery
 - A. Visual aspects
 - eye contact
 - gestures
 - facial expression
 - B. Auditory aspects
 - volume
 - rate of speed
 - C. Pronunciation
 - (specific problems...)
 - D. Grammar
 - (specific problems...)

On Parts I. and II. you will receive excellent--good--fair--poor.

- II. Content
 - A. Information
 - amount
 - explanations/examples
 - transitions
 - B. Modalities
 - blackboard, etc.
 - C. Audience questions
 - inviting
 - responding

- III. Overall Comments
 - A. Suggestions for improvement:
 - B. Best aspects of the presentation

We consider ourselves "coaches" more than judges, as we want to give you practice speaking and ideas for sharpening your more formal speaking skills. At some point or another in graduate school, all of you will be called upon to make extended oral presentations.

Ideas for Speeches: choose one of the following topics, if you'd like, broadening it or narrowing it to meet your needs. It is only a partial list of the many topics subsumed under the theme of the seminar.

- Discuss the attitude of your government's bureaucracy or politicians to university research scientists OR vice-versa.
- Discuss how international aid has provided new technology that has/has not improved agricultural production that meets the needs of all your citizens.
- Discuss the ecological impact, foreseen or unforeseen by scientists, of new technology in agriculture in your country or community.
- Talk about who commands the resource allocations in your country vis à vis agricultural production (government bureaucrats, universities, citizen councils, politicians, U.S. AID) and how this affects your work as a scientist.
- What technological know-how is reaching your country's farmers through extension efforts, and how has this diffusion process taken place?
- What areas of biotechnology are best suited to meeting the food production/natural resources of your country?
- How can your country act to protect its resources from possible exploitation or mismanagement by transnational corporations from developed countries? Give examples from recent history that are instructive.

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