

Is There a Role for Engineering Teachers in the Language Classroom?

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Key words : ESP, collaboration, team teaching, motivation

Abstract : This paper focuses on collaborative teaching between foreign language (primarily English) and discipline teachers. The focus is on team teaching, but other examples of collaboration are given. Benefits for students include increased relevance, which positively affects motivation and interest. Teachers also benefit from the interaction with their co-teachers. Team teaching is still relatively uncommon in higher-education EFL contexts, but is recommended in ESP classrooms as an approach to integrating discipline and language studies.

Key words : team teaching, collaborative teaching, ESP, LSP

1 . Introduction

Traditionally, and typically, university subjects are taught independently of each other. In cases where there is some blending, it tends to be with disciplines that are relatively close in approach to each other, such as literature and history, or physics and mathematics.

Engineering and languages are normally placed in two different camps. Is collaboration between them possible? What can they offer to each other, and can collaboration benefit students in their engineering studies and in learning a foreign language?

This paper will look at collaboration in general, and that between foreign language teachers and teachers from other disciplines in particular. It will seek to define benefits, areas of difficulty, and different degrees of collaboration possible, in order to determine whether engineering teachers do have a role in language classrooms.

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2 . Team teaching and collaboration

As used in this paper, team teaching refers to the interactive involvement of two(or more) teachers in a single class. While it does not strictly require that both teachers be present in the classroom at the same time, they should be working with shared materials, often examining them from different perspectives. The key is collaboration, defined by Collins COBUILD English Language Dictionary as "...the act of working together to produce a piece of work". We shall begin with a brief survey of collaborative teaching, in various fields, forms, and degrees, and then explore the situation as applied to collaborative language teaching for university students of a particular academic field.

3 . Collaboration and its benefits

Collaboration between teachers is almost always reported to be a beneficial experience for all involved. Benefits are reported when language teachers collaborate among themselves (Lee, 1999; Tajino & Tajino, 2000) and when language teachers and those of some other discipline collaborate in teaching (Dudley-Evans, 1984; Graham & Beardsley, 1986) Teachers are enthusiastic about collaboration when working with non-native speakers, but also when teaching discipline-focused communication skills to native speakers(Ostheimer et al., 1994)

The most commonly mentioned benefits are increased student motivation and interest. This is especially true in stronger instances of collaboration, such as team teaching. Student interest can be raised by content, of course, and that is normally the focus of collaboration. However, matters of delivery also influence interest. Exposure to two or more teachers allows students to experience various teaching styles(Lee, 1999) and if the teachers are in the classroom at the same time, the interaction between them can be of great interest to the students(Clayton, 1996) Simply the variation in voice and delivery style can be a plus; one student wrote of a team-taught class in management studies, "Single person monotone lessons are avoided." (Wenger & Hornyak, 1999: 326)

In situations where the collaboration is between a discipline and a language teacher, increased relevance of content is seen as a large motivating factor. Learners are more likely to feel that their language studies will be of use to them if language topics are tied in with their major course of study. This is true of language skills even for native speakers. The "Writing Across the Curriculum" movement in universities across the United States has focused on introducing substantial written work into discipline classes,

usually with guidance from both composition and discipline teachers. The perception that communication and subject skills are separable is being challenged, and increasing emphasis is being placed on integration.

In the United States, this has been carried into foreign language classrooms as well. In "Foreign Languages Across the Curriculum" classes, typically an adjunct language class is attached to a subject class; for instance, a course in macro-economics may have a Spanish-language adjunct class in which the subject is studied in Spanish, with examples from Spanish-speaking areas. Another approach is a "bridge" course; a language course with a focus on a particular discipline(Allen, 1997) The object of this movement is to increase the relevance of foreign languages and allow learners a chance to use them in an area of interest to them, while bringing a more international perspective to the subject studies(see Stryker & Leaver, 1997) In such cases, foreign language-proficient discipline teachers are often enrolled, as has been done at Earlham College(Jurasek, 1988) and advised by foreign language teachers. Another approach used international graduate students to find and integrate discipline-specific resources into undergraduate classes, guided by language teachers(Badger et al., 1993, cited in Spinelli, 1995) Mixing foreign languages and engineering, the University of Rhode Island set up a joint degree program in Engineering and German. Students study German for Engineering at the university, and then participate in a 6-month internship in a German-speaking country (Spinelli, 1995) The International Engineering Program there has been expanded to include French and Spanish.

In each of these movements, integrated courses are formulated to help students, whether native speakers or second language learners, understand the value of language and communication skills to their main area of interest. In addition, the time and effort invested by discipline teachers demonstrates to students that language and communication skills are regarded as important within the discipline. This gives extra 'legitimacy' to subjects which are normally regarded as far removed from core subjects - as Jordan says, "the students see that their subject tutors take the...classes seriously. This can only be advantageous" (1997: 121)

Thus, students' attitudes towards the language and language learning situation are normally assumed to be positive - more positive than in an 'isolated' language class. Equally important is the understanding that students can gain of links between language skills and subject knowledge. Graham & Beardsley reported of their collaborative ESL

class in pharmaceutical studies that "content-area information and skill development enhance the learning of specialized communication" by enriching context, stimulating interest, and increasing the course's perceived relevance(1986: 239)

The same is true on the side of the instructors. Close collaboration between teachers, even of the same discipline, is a learning experience: "Even when the collaboration is limited to two or more English language teachers engaged in addressing common concerns, the opportunities for introspection, reflection, and impact on one's practice can be profound" (Crandall, 1998:6) Alimi et al. (1998) also stress the benefits in improvement of teaching methods and materials. Wenger and Hornyak (1999) found that team teaching led to increased collaboration among professors and stronger linkages across topics. In general, Lee's statement sums it up: "the process of working together is itself intellectually stimulating and promotes professional growth" (1999:126)

In collaboration between discipline teachers (DTs) and language teachers (LTs) language teachers have an opportunity to learn more about the discipline - not only the subject knowledge but also its conceptual approach. Meanwhile, discipline teachers can become more aware of language use. Especially for those teaching in English-medium institutions, DTs learn to adjust their language to increase the comprehension of students for whom English is a second language. Teaching methods often vary considerably between discipline lectures and language classrooms, and the more interactive approaches used by many LTs can be a new experience for some DTs.

4 . Difficulties with implementing collaboration

Administrative and personal factors have a great influence on the practicability and effectiveness of collaborative teaching ventures. On the administrative side, there are often budgetary and scheduling restrictions. Administrators may balk at paying for two teachers or at compensating informants for their time. It appears that many of those involved in collaborative teaching are doing it without financial compensation, judging that other benefits are more important. Arranging scheduling for two teachers to be in the classroom at the same time can also cause difficulties.

However, the larger factor appears to be the human one. Both parties should have an interest in cooperating with and learning from each other; collaboration cannot be forced. Personality conflicts may arise. Different approaches to teaching and evaluation may cause conflict, and should be anticipated and resolved as far ahead as possible. Wenger &

Hornyak (1999) stress the need in team teaching for explicitly defining the role each teacher should play, and for careful pre-lesson planning, to include clarifying the lesson objectives and mapping out when each teacher shall take his/her turn.

"However, the general value and wider applicability of particular team teaching schemes is very hard to evaluate. So much seems to depend on the personalities involved, on whether there is mutual educational and intellectual respect, and on circumstances that may encourage or discourage the maintenance of a team-teaching initiative" (Swales, 1988: 138)

For these reasons, it may be best to proceed in steps, moving through various degrees of collaboration and confirming its value, before moving on to a project as demanding as team teaching (Dudley-Evans and St John, 1998) Some examples of collaboration between language and discipline teachers are given below.

5 . Collaboration in LSP

Collaboration has long been given attention in the teaching of Languages for Specific Purposes (LSP) for obvious reasons. Since there are few teachers qualified to teach both an in-depth subject and a foreign language, some degree of collaboration has long been seen as a desirable, often essential, feature of course development.

Varying degrees of collaboration and cooperation are possible. Discipline teachers (DTs) can act as informants in various capacities. For instance, language weaknesses noted by DTs can be focused upon, or vocabulary typically used in discipline teaching materials (provided by the DT) can be a focus of a language class. Another example of minor but valuable collaboration is previewing teaching materials. Teaching materials produced by an LT can be checked for accuracy by a DT. Similarly, DT teaching materials which will be used by non-native speakers can be revised for clarity with the cooperation of the LT. On a larger scale, DTs can assist with curriculum development (see Crandall (1998) for an example)

Outside of the classroom, a DT can be asked to act as an informant, showing the LT the kind of tasks required of the students in discipline courses. This is especially valuable when students are expected to perform their academic studies in English. LTs can then incorporate similar tasks into the classroom. This can be carried further, by having the DT visit class to go over specific points or answer questions that the LT cannot. Carrying this one step further, Johns & Dudley-Evans (1980) focused on working with students on writing examination answers. The DT would set a sample exam question, and the LT teacher lead the students in discussion on the meaning of the question, the expectations of

the DT, and possible approaches to answering the question, with the DT commenting.

Collaboration upon a single project in either a discipline or language class is another step. Collaboration in such a project may be in the planning stage, in working with the class, or in the evaluation stage. Teachers may invite each other into the classroom as guest speakers. Adams-Smith (1980) for example, used a reading and short film on a technical subject (electron microscopy) and after work with vocabulary and language features, a DT in medical science was asked to answer questions and expand on the contents of the film. Such 'limited teaching situations' are good first steps in fostering the attitude needed for full collaboration, says Adams-Smith.

Finally, whole courses may be designed to be collaborative ventures. This is often referred to as team teaching. One style is "parallel teaching" (Crandall, 1998) such as adjunct classes, in which a language class is paired with a discipline class, using materials from that discipline class as the basis for language teaching in order to help students perform successfully in the discipline course (an example is seen in Johns & Dudley-Evans, 1980) A variation is to build a language class upon a discipline class, providing additional second- or foreign-language materials on the subject (this is common in the FLAC programs mentioned above) While the LT tends to be the primary teacher in the parallel language classroom, the DT is also involved in planning and coordination, and may have a regular role in the language classroom.

Another style is for the teachers to create a single, multi-disciplinary class. Typically, both DTs and LTs are present in the classroom "co-teaching" (Crandall, 1998) throughout the class, although taking turns (sometimes called "joint teaching") is a variation sometimes turned to, usually for practical reasons such as timetable or pay restraints. DTs and LTs also collaborate in preparation and evaluation, in most cases.

ESP language/discipline collaboration at the level of team teaching appears to be most typical in university programs in English speaking countries (or English medium universities in other countries) The focus appears to be on language being integrated into subject courses, i.e. language support to assist the student in absorbing the subject knowledge needed. As is pointed out by Johns & Dudley-Evans, the two are often inseparable: "an overseas student's failure to keep pace with his course or with his research is very rarely attributable to 'knowledge of the subject' or 'knowledge of the language' alone: most often, these factors are inextricably intertwined" (1980: 7) Realization of this interrelationship of the two factors has led to attempts to address the

two areas in an integrated manner.

Compared to ESL situations, there are far fewer reports from countries where English is studied as a foreign language of collaboration carried as far as team-teaching; that is, at the university level. At the secondary level in Japan, for instance, there has been a nationwide program to provide students in junior and senior high schools with classes team-taught by native English speakers and Japanese teachers of English. In this case, both are language teachers, working together to provide students with a well-rounded exposure to general English.

Team teaching is, however, still rather rare in EFL contexts at the university level, when the need for more specialized English skills is conducive to DT/LT collaboration. One factor is clearly that English is not as 'urgently' needed in an EFL situation; however, English skills are widely acknowledged to be necessary, particularly in medical and technical fields. Another factor may be the reluctance of some DTs to display their non-native English skills to students, or even to other teachers. However, it can be surmised that some students will find their DTs to be role models in English learning, proof that they, too, can someday gain the skills necessary.

In language teaching in EFL contexts, there has been a growing concern with the isolation of content matter and language. However, it appears that the most common response to this has been to move towards 'content-based instruction' (see Stryker and Leaver, 1997) in which the language teacher attempts to introduce a topic and language together. While some collaboration may be involved in the choice of materials, this tends to stop short of active involvement of two or more teachers throughout the course.

6 . Conclusion

Students studying a particular discipline, such as engineering, are also required to study a foreign language, largely because language skills are felt to be necessary for success in that discipline. However, interest and motivation are often problems for such students in language classes. By collaborating with discipline teachers, greater relevance can be brought into language classes. Thus, collaboration appears to be another avenue to be explored - particularly at the team-teaching level - for its benefits to both students and teachers involved in such courses. There is indeed a role for engineering teacher in the language classroom, and that role can range from acting as a background informant or guest lecturer to becoming a teaching partner in the classroom.

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