

Overcoming Language Barriers in Content-Area Instruction

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Abstract

As new English-medium universities open their doors in the Arabian Gulf and some Arabic-medium universities switch to using English as the language of instruction, instructors in all disciplines face the challenge of teaching their courses in English to students who have learned (and who are continuing to learn) English as a foreign language. This article reviews theories and practices from the field of Applied Linguistics and Teaching English as a Second Language (TESOL) which can help content-area instructors understand and reach these learners.

Second language acquisition research has produced several concepts of interest to content-area instructors. Krashen's theory of *comprehensible input* focuses on the language used by the instructor, while Swain's of *comprehensible output* emphasizes providing opportunities for students to produce language. Cummins differentiates between two types of language proficiency: Basic Interpersonal Communication Skills (BICS), which are needed for daily interactions, and Cognitive Academic Language Proficiency (CALP), which is required for academic tasks. Interlanguage and first language interference may also influence students' second language production in classroom settings.

Specific classroom practices for improving students' language comprehension and facilitating content learning are recommended. These include modifying speech, using visual aids, utilizing a variety of questioning techniques, and extending the time instructors wait for students to respond. Instructors can employ strategies, such as mind-mapping and quickwriting, to activate students' linguistic and conceptual schemata at the beginning of a lesson. Scaffolding provides structure and support for students to complete tasks until they are able to realize them on their own. Collaborative/cooperative learning lowers students' affective filters and offers opportunities for participation and language practice. Graphics illustrate some of the suggested practices.

Introduction

In recent years, the Arabian Gulf countries have seen several new English-medium universities open their doors. At the same time, some previously Arabic-medium universities are transitioning to using English as the language of instruction. Instructors in all disciplines, from History to Engineering, face the challenge of teaching the courses in their discipline in English to students who have learned (and who are continuing to learn) English as a Foreign Language (EFL). These content-area instructors are sometimes surprised by students' low level of English language proficiency (Sonleitner & Khelifa, 2004) and feel frustrated because, although they are experts in their academic fields, they lack the knowledge and skills to deal with language issues in their classrooms. This article reviews theories and practices from the field of Applied Linguistics and Teaching English as a Second Language (TESOL) which can help content-area instructors understand and reach these learners.

Theories/Concepts from Second Language Acquisition Research

Imagine that you enter your classroom to give a lecture. You open your lecture by asking students some questions related to the assigned reading for that day. The students stare at you blankly, and you get the impression that they had not read the assigned text. One student complains (quite fluently) that the reading was too long. You continue your lecture, then, by reviewing the content that had been covered in the reading. As you are speaking, you notice that none of the students are taking notes, which makes you feel irritated. You try to make the class more interesting by throwing out some questions to stimulate student participation. One or two students attempt to answer your questions, but their answers are very brief. In addition, it is sometimes hard to understand the ideas they are trying to express because of their pronunciation and grammar. In the end, you leave the class wondering how much of the content your students really learned.

Language and content are inextricably bound. To successfully teach content to second language learners, instructors need to understand the second language acquisition process their students are experiencing (de Jong & Harper, 2004; Glaudini Rosen & Sasser, 1997; Wilcox Peterson, 1997). Understanding this process will enable instructors to identify the sources of the language issues in their classrooms and to find pedagogical solutions for them. The research on second language acquisition has produced a number of theories and concepts that content-area instructors should be aware of.

Comprehensible input. Krashen argued that learners acquire language through being exposed to language input that is slightly beyond their current language proficiency level. Contextual and extralinguistic clues help students to understand the entire message. By understanding this more advanced input, the students' language proficiency increases (Echevarria, Vogt, & Short, 2004; Grabe & Stoller, 1997; Kasper, 2000a). In content-area classes in English-medium universities, teaching and learning are mediated through the English language. If students cannot understand the language, they cannot grasp the content. For this reason, classroom language, both written and spoken, needs to be made as comprehensible to students as possible for content learning and language learning to reinforce each other.

Comprehensible output. Some scholars have challenged Krashen's idea that comprehensible input is sufficient for second language acquisition. Swain proposed that to develop language skills students must also produce language that is comprehensible to others. It is in this effort to formulate comprehensible output that learners try out hypotheses about how the language works, and so gradually acquire the language (Gibbons, 2002; Grabe & Stoller, 1997). To accomplish this, instructors must limit their teacher-talk (the time the instructor spends talking in the classroom) and create more opportunities for students to produce spoken and written language during their lessons. As Echevarria et al. (2004) have noted:

It can be particularly tempting for teachers to do most of the talking when students are not completely proficient in their use of English, but these students are precisely the ones who need opportunities to practice using English the most. (p. 103)

Content-area instructors need to employ teaching methods which foster active student participation. Through participating and producing comprehensible output, students gain not only content-area knowledge but also language proficiency.

Types of language proficiency. Content-area instructors may hear their students speaking English fluently and wonder why such students cannot read textbooks, listen to lectures and take notes, or write research papers. Cummins' distinction between basic interpersonal communication skills and cognitive academic language proficiency helps to explain this discrepancy. Basic Interpersonal Communication Skills (BICS) refers to the ability to have conversations and carry out daily activities in the second language. Students can acquire BICS within two years of language study. In contrast, cognitive academic language proficiency (CALP) refers to the ability to use the second language in order to learn and do academic work. CALP takes five to seven years to fully develop (Crandall, 1994; Grabe & Stoller, 1997; Kasper, 2000a; Wilcox Peterson, 1997). Content-area instructors should recognize that although students may be able to converse easily in English, they may not yet have developed the cognitive academic language proficiency which is necessary to successfully undertake

university-level studies in a second language. Thus, content-area instructors have a role to play in developing their students' cognitive academic language proficiency.

Interlanguage. People who are learning a second language develop an "interlanguage," an intermediate language system which includes what students know about their first and second languages. In the early stages of interlanguage development, the knowledge of the second language is incomplete. It may seem that learners are making many "errors" when they try to speak or write the language. However, these errors can be seen as "experiments," a natural part of the language acquisition process. As the students acquire more knowledge about the second language, their interlanguage will become more like the second language (Gopaul-McNicol & Thomas-Presswood, 1998; Teemant, Bernhardt, & Rodríguez-Muñoz, 1997). Understanding the concept of interlanguage will help content-area instructors to be more tolerant of the less-than-native-like language produced by their students.

Language interference. Often aspects of students' first language appear in the students' production of a second language. For example, the students may incorporate sounds from their first language in their pronunciation, structure their sentences according to the first language's grammar, use vocabulary from their first language, or present their ideas using the rhetorical styles common to their culture (Gopaul-McNicol & Thomas-Presswood, 1998; Rosenthal, 2000). If content-area instructors have some knowledge of their students' first language, they can identify when errors in production are caused by language interference.

Classroom Practices for Content and Language Learning

Researchers and practitioners are starting to take notice of the relationship between content learning and language learning. There is a growing literature on content-based language instruction (Brinton & Holten, 1997; Brinton & Masters, 1997; Crandall, 1998; Crandall & Kaufmann, 2002; Haley & Austin, 2004; Kasper, 2000b; Pally, 2000; Snow & Brinton, 1997) and on teaching second language learners in mainstream content-area classrooms (Echevarria et al., 2004; Gibbons, 2002; Mohan, Leung, & Davison, 2001; Rosenthal, 2000). This literature recommends numerous classroom practices that instructors can implement to teach content to second language learners more successfully while at the same time contributing to the learners' language development.

Providing comprehensible input. As mentioned previously, receiving comprehensible input is imperative for learners to develop their language proficiency and to gain disciplinary knowledge. There are several actions that instructors can take to make their input more comprehensible to learners. The first is for instructors to be aware of their own speech patterns. Instructors should try to reduce "fillers" (such as "uh" or "you know"), avoid idiomatic expressions, speak in short sentences, pause frequently, rephrase the concepts, and summarize the main ideas of their lectures. The point is not to simplify the concept taught, but rather the language used to explain that concept (Echevarria et al., 2004; Glau dini Rosen & Sasser, 1997; Rosenthal, 2000; Teemant et al., 1997; Wilcox Peterson, 1997).

Another way for instructors to make their language and content input more comprehensible to learners is by using visual aids. Visual aids are useful for providing context that helps students understand the linguistic/conceptual input. These include notes written on the board or shown in a multimedia format, as well as photos, illustrations, charts, or graphs – all of which support students' understanding of content (Echevarria et al., 2004; Gersten & Baker, 2000; Glau dini Rosen & Sasser, 1997; Rosenthal, 2000). It is common as instructors are teaching to scribble a word or phrase on the board as a thought comes to mind. However, instructors must be conscious of their handwriting. Some students who are learning English as a Foreign Language, especially those whose first language uses a writing system different than that of English (like Arabic), may be unfamiliar with cursive (script) in English. Therefore, it would be difficult for them to read a word written in cursive, to copy it in their notes, and to spell it correctly. It is preferable for the instructor to print, or use block letters, in these cases.

Another kind of visual aid is realia. These are everyday objects that are brought into the classroom (Echevarria et al., 2004). For example, if an instructor is

teaching the history of a certain region of the world, he/she might bring an artifact from that area to show students. When the students in my *Introduction to Language and Communication* course learned about the concept of positioning in advertising, I brought boxes of breakfast cereal to class to serve as examples and to stimulate discussion of the concept. These real objects provide greater contextual clues for understanding. By modifying their speech and using visual aids, instructors can make their language input, and thus their content input, more comprehensible to students.

Asking questions and waiting for answers. As instructors are teaching, they commonly ask students questions to involve them in the lesson and to gauge their comprehension of the subject matter. Low levels of language proficiency may prohibit students from offering lengthy responses to an instructor's question. Therefore, instructors should be familiar with a range of question types that they can employ depending on the student's proficiency level. For example, they might ask students an either/or question, a yes/no question, or a question that can be answered with only one word (Glaudini Rosen & Sasser, 1997; Teemant et al., 1997).

Wait time "refers to the length of time that teachers wait for students to respond before interrupting, answering a question themselves, or calling on someone else to participate" (Echevarria et al., 2004, p. 106). When students are speaking English as a foreign language, instructors must allow them more time to process their questions and to formulate answers (Echevarria et al., 2004; Glaudini Rosen & Sasser, 1997; Rosenthal, 2000). Once they ask a question, instructors should be prepared to wait in silence for five to ten seconds as students translate the question in their minds from English to Arabic, think of a response in Arabic, translate their response into English, and raise their hands to answer. This extended wait time will allow more students to participate, not only those with the quickest responses.

Instructors also want students to ask questions if they do not understand, and they usually try to allow time in the lesson for those questions. However, students may be inhibited from asking questions by the way instructors frame their question prompt. If the instructor attempts to elicit questions by asking them "Do you understand?" or "Is this clear?" students may feel embarrassed to say "No, I don't understand" in front of their classmates. A more positive way to elicit questions is by asking, "Do you have any questions or comments?" In this way, asking a question is not an admission that the student does not understand. Furthermore, students may share comments that stimulate other students to participate.

Activating students' linguistic and conceptual schemata. Students often have prior knowledge of or experience with the content that instructors wish to introduce to their classes. This prior knowledge or experience is called schemata. Students can more easily comprehend classroom activities when instructors activate their linguistic and conceptual schemata surrounding the topic of study. This can be done by utilizing activities at the beginning of the lesson that stimulate students' thinking about their existing knowledge of the topic (Echevarria et al., 2004; Glaudini Rosen & Sasser, 1997; Shaw, 1997; Wilcox Peterson, 1997).

One activity for awakening students' schemata is by creating a mind map, also called a semantic web (Gibbons, 2002) or a semantic word map (Vacca & Vacca, 2002). This is a brainstorming activity. Students are given one word, such as "family," "war," or "poetry." This word is written in the center of a circle. Students then identify other words that are related to this concept, and they write them around the main word, like spokes on a wheel. For example, students might identify words such as "children," "home," or "marriage" with the concept of family. Once several subpoints have been added to the wheel, students can work in small groups to identify yet more words related to these subpoints. This exercise serves to activate the vocabulary and conceptual knowledge students possess, which can then be used as the basis for developing the concept further in class. Appendix A contains an example of a mind-map from the field of geography.

Another exercise for activating schemata is called quickwriting. Again, students are presented with a word or question, and they are given a limited time (perhaps five minutes) to write their ideas on this topic in sentence form. For

instance, one question could be “What is a family?” Students then share what they have written in small groups or during a whole class discussion.

Providing scaffolding. Instructors can move students toward higher levels of academic performance through scaffolding. In scaffolding, the instructor provides a structure which helps students to do something which they cannot do on their own. Eventually, the supporting structure is removed, and students are able to perform without assistance (Echevarria et al., 2004; Gibbons, 2002; Vacca & Vacca, 2002). There are three types of scaffolding that instructors may provide: verbal, procedural, and instructional (Echevarria et al., 2004).

With verbal scaffolding, instructors provide support for students to understand and produce language. Making sure our input is comprehensible to students is one way to provide verbal scaffolding. Another way to provide verbal scaffolding is to repeat a student’s answer to model the correct pronunciation or grammar (Echevarria et al., 2004; Glaudini Rosen & Sasser, 1997). Modeling the correct English response is an especially useful strategy when students respond to an instructor’s questions in Arabic. This is an opportunity for instructors to turn that Arabic into comprehensible input in English. First, the instructor can prompt the student, “Can you tell me in English?” If the student is still unable to produce the answer in English, the instructor can model the correct English response for him/her. If the instructor is an Arabic speaker, he/she already understands what the student wishes to express. The instructor should affirm the student’s desire to participate and repeat the student’s answer back to him/her in English. For example, “Yes, Aisha, that’s right. Surveillance is one function of mass communication.” The instructor might also write the student’s response on the board in English at this time so that the student can hear and see this new vocabulary.

Instructors who are not Arabic speakers can still use this method. First, they ask the student to say his/her response in English. If the student cannot, the instructor may elicit the help of another student to translate the idea into English. As before, the instructor can repeat the answer in English and write the word on the board. When the instructor uses this method, the students feel they can participate in class without being limited by their low level of English proficiency. At the same time, the instructor is able to identify gaps in students’ English vocabulary and to model the term in both speech and writing. The next time the concept occurs in class, students will be better able to discuss it using English.

Verbal scaffolding can also be provided for the quickwriting activities mentioned earlier. When weaker students are faced with writing on a given topic in a limited amount of time, they might freeze and not write anything. For these students, sentence starters can be provided. For instance, one topic we studied in my *Introduction to Language and Communication* course was the sources of self-concept. Students were asked to write on a belief they hold about themselves and the sources of this belief. The following sentence starter was given as a prompt: I believe I am _____ because _____. While more proficient students could write lengthier responses in their own words, less proficient students only had to fill in the blanks.

Procedural scaffolding helps students to follow a process or to conduct some activity. It often comes into play when giving students instructions on how to complete some task. Second language learners benefit from receiving step-by-step instructions in oral as well as written form. In addition, instructors can demonstrate what they want students to do as they state the steps and highlight them in the written instructions. Group work also provides procedural scaffolding since students can observe how other students are completing the task (Echevarria et al., 2004).

Instructional scaffolding provides a structure for developing a skill or thinking about a concept. For example, to develop listening and note-taking skills, an instructor might provide the students with an outline of his/her lecture. This outline would contain some blanks. As students listen to the lecture, they fill in the blanks with words from a box. An illustration of this format is located in Appendix B. As students become skilled with this level of note-taking, the instructor can eliminate the words in the box and include more and more blanks in the outline. With time, the students should be able to write their notes in outline form by themselves.

Another kind of activity which provides instructional scaffolding is called an *information gap*. It can be created from lecture outlines, charts comparing two concepts, or diagrams illustrating a process. In an information gap activity, students work in pairs or small groups. Each person in the group has a copy of the same lecture/chart/diagram with some information filled in and some information left blank. However, each person has different information filled in and different information left blank. Because each person in the group has different pieces of information, students must ask each other questions to collect the missing information and to complete their outline, chart, or diagram. This activity provides opportunity for students to practice listening and speaking about a specific content area. Appendixes C and D provide examples of an information gap activity which draws on concepts from the field of marketing.

Employing collaborative/cooperative learning. As previously noted, students develop their language proficiency by having opportunities to produce comprehensible output. Classroom activities in which students work together in pairs or small groups to complete some task allow for more student-generated talk, thus leading to achievements in both language and content-learning (Crandall, 1994; Echevarria et al., 2004; Glaudini Rosen & Sasser, 1997; Grabe & Stoller, 1997). Instructors should try out different kinds of groupings to identify those that work best with their students (Echevarria et al., 2004). For example, students with higher levels of language proficiency could be matched with those who are less fluent. In this scenario, the stronger students can model the language and act as sources of input for their less proficient peers. Likewise, weaker students may feel more comfortable to experiment with language and to try to produce comprehensible output in small groups rather than speaking in front of the entire class.

Teaching Content is Teaching Language

Anytime you enter a new academic discipline, you must acquire the language of that discipline. You must learn the concepts that people in that field believe to be important. Furthermore, you must learn how people in that field talk about those concepts, what language they use, and how they use it. In that sense, we are all language teachers even when we teach content to native English-speaking students.

University students in the Arabian Gulf are often still learning general English when they enter our classes, and are faced with the special language of our discipline. Sometimes, our students have already exited from an English language program and may not receive any further English language training at the hands of language teachers. Therefore, if we expect students to learn the content of our courses, we must play a role in developing students' social language skills as well as academic language skills.

As de Jong and Harper have stated, "All teachers must be prepared to accept responsibility for the academic content and language development of ELLs [English Language Learners]" (2004, p. 127). Incorporating the classroom practices described in this article into our lessons is one way we can contribute to our students' content and language learning. However, there is still more we can do. Several scholars have advocated that content-area instructors should set both content objectives and language objectives for their lessons when their classes contain second language learners (de Jong & Harper, 2004; Echevarria et al., 2004; Gersten & Baker, 2000). These language objectives can be as simple as selecting certain vocabulary words for emphasis. They may be related to language skills, such as reading and comprehending the textbook or writing an essay. Additionally, they may be linked with higher-order thinking skills like comparing, hypothesizing, or summarizing (Echevarria et al., 2004). These language objectives are not isolated from the content objectives of the course. In fact, setting and achieving these language objectives can only enhance students' content-area learning.

Teaching courses in English to students who are not fluent in the language creates many challenges for content-area instructors. They may feel frustrated because it seems that students do not comprehend their lectures, do not read the assigned texts, or are not able to participate in class. By understanding the second language acquisition process and implementing classroom practices to develop students' English language proficiency, instructors can overcome the language barriers which impede content teaching and learning.

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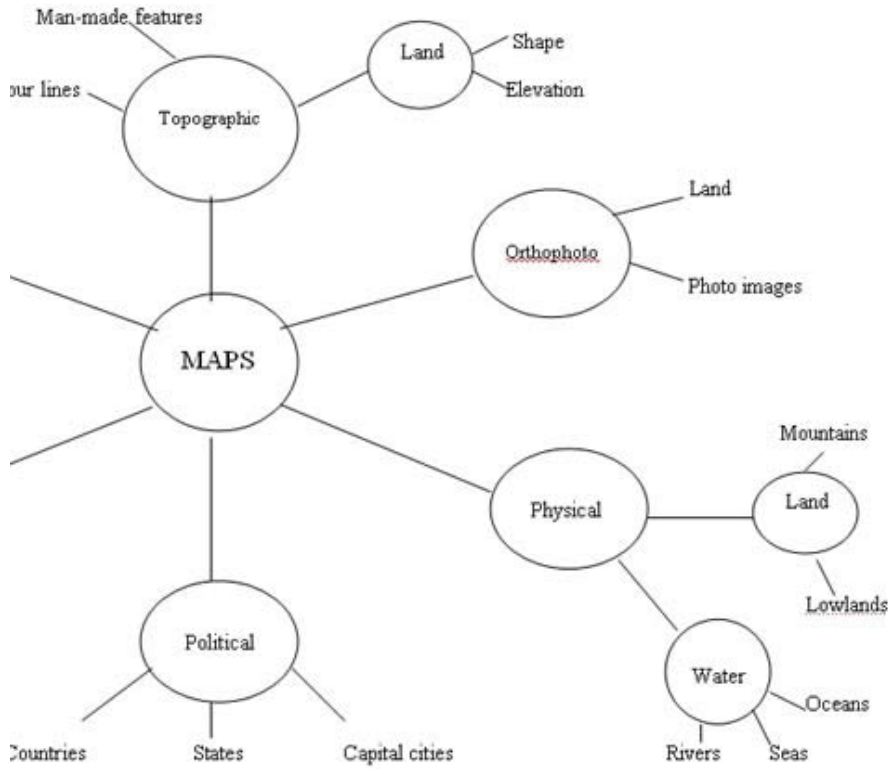
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Appendix A

A Mind Map about Maps!



Appendix B

Consumer Motivation Lecture Outline

Consumer Needs

- 1. To meet physiological needs
- 2. To be _____ and healthy
- 3. To have _____ and companionship
- 4. To have _____ resources and security
- 5. To feel _____
- 6. To maintain a social _____
- 7. To possess material goods
 - 1. self-concept
 - 2. impulse buying
- 8. To be altruistic
- 9. To acquire _____
- 10. To experience _____

Motivational _____

- 1. Approach-approach
- 2. Avoidance-avoidance
- 3. Approach-avoidance

Strategies for Motivating Consumers

- 1. Linking products to needs
- 2. Overcoming _____ barriers
 - 1. discounts
 - 2. rebates
 - 3. coupons
- 3. Providing other _____
- 4. Implementing a _____ program
- 5. Enhancing perceived _____
- 6. Arousing consumers' curiosity

incentives	loyalty	risk
information	pleasure	safe
love	price	variety

Appendix C

Information Gap: Student X

Marketing Data

	Where does it come from?	What are its advantages?	What are its disadvantages?
Primary	1. _____ 2. Asking questions <ul style="list-style-type: none"> a. _____ b. Interviews c. _____ 	Data are more specific to the problem under study.	1. Collecting the data is _____ 2. Collecting the data costs money.
Secondary	1. Internal secondary data = Exist within the organization. Example: _____ 2. External secondary data = Come from other organizations Example: _____	1. _____ 2. Money is saved.	1. Data might be _____ 2. The definition or categories of data might not match those of your project.

Appendix D

Information Gap: Student Y

Marketing Data

	<i>Where does it come from?</i>	<i>What are its advantages?</i>	<i>What are its disadvantages?</i>
	1. Observations 2. Asking questions a. Questionnaires b. Interviews c. Focus groups		1. Collecting the data is time consuming. 2. Collecting the data _____
hat n ier	1. _____secondary data = Exist _____ the organization. Example: Sales reports 2. _____secondary data = Come from _____ Example: Government census information	1. Time is saved because information is already available. 2. _____	1. Data might be out-of-date. 2. The definition or categories of data might not _____ _____ _____