

Students Learn English Better... *Learning to Teach It!*

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Abstract

This article provides a brief theoretical framework as well as literature review and describes the activities of an on-going research program which examines the experiences of students and professors at a specialized bilingual teacher's college in the Republic of Colombia, South America. It follows the development of a new pedagogical model as these same students and professors adapt their higher education academic practices to the Sheltered Instruction Observation Protocol (SIOP), which integrates English instruction into content-courses.

Este artículo provee un breve marco teórico tanto que un resumen bibliográfico y describe las actividades de un proyecto continuo de investigación, el cual examina las experiencias de los estudiantes y profesores de una especializada institución universitaria bilingüe en la República de Colombia, América de Sur. Este sigue el desarrollo de un modelo pedagógico nuevo mientras que estos mismos estudiantes y profesores adaptan sus costumbres académicas de educación superior al Protocolo de Observación de la Instrucción Protegida (SIOP) que integra la instrucción del inglés en los cursos de contenido.

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Capacitación Bilingüe de Profesores, Institución Universitaria Colombo Americana (ÚNICA), Instrucción (Protegida) Basada en Contenidos (CBI), Protocolo de Observación de la Instrucción Protegida (SIOP), Modelo de Prisma, Hipótesis de 'Input'

Introduction

"We learn best when we teach" was the valuable advice I received as a young college professor facing a room full of veteran teachers for the first time. Precisely it was this very advice which has served as a basis for the activities that comprise the core of the research project I have been privileged to lead in Colombia, a project undertaken by professors and students regarding the use of the best practices for second language acquisition. The purpose of this article is threefold. First, I will present the research project in the light of its many smaller studies. Secondly, I'll provide the theoretical perspectives underlying the project. Thirdly, I'll situate the project as a new proposal within the body of work that already exists on the subject of content-based learning for second languages. The reader should be able arrive to the conclusion (the fourth section) with a much broader understanding of the scope of the research activities which ÚNICA is currently carrying out and should also have obtained basic insights on the related theories and research.

Research into the best practices for teaching English Language Learners (ELLs) in the United States (U.S.) has shown evidence that learning language through content along with on-going native language support yields the most effective results for educational achievement. The type of program model that teaches ELLs through second language content instruction such as math, science, history and literature is known as Content Based Instruction (CBI). A sub-category of it, named Sheltered Instruction, has been well-tested by teachers who participate in research projects. As these teachers began to use sheltered instruction theories, however, the way they applied the model varied considerably, which sometimes led to contrasting research conclusions.

Approximately ten years ago, researchers at the Center for Applied Linguistics (Washington, DC) began observing exemplary second language teachers throughout the U.S. to identify their most effective behaviors and to create a framework for instruction. Since then, they have developed and tested a type of sheltered instruction known as the Sheltered Instruction Observation Protocol, or SIOP model. This model is currently being used across the fifty states as well as internationally.

The SIOP model distills the current best practices and takes advantage of the knowledge research results offer to provide a coherent framework for *Lesson Planning*, (the first component). Through the model, teachers plan for specific content objectives in each lesson and, later plan for student language needs to accomplish the objectives. They then should include the following components in their lessons to further support their ELLs: 2. *Build Background* by linking the subject to students' lives for relevant learning; 3. Provide *Comprehensible Input* so that students clearly understand the lesson by using items such as graphic organizers, and other visual aids (which raise thinking levels through use of cognitive learning strategies); 4. Have the students *Interact Cooperatively* through group work; 5. *Apply and Practice* concept and language skills; and then, 6. *Review and Assess Learning* through self, peer and teacher evaluations. Finally, 7. *Lesson Delivery* is given through an approach that is helpful for all learners but which is especially geared to protect the learning process of second language students. SIOP, precisely in order to protect such learning processes, promotes the use of a separate classroom for such students, hence the place of the word "sheltered" in the SIOP abbreviation.

I. Project Description

A. Context

Our college is the *Institución Universitaria Colombo-Americana*, more commonly known as ÚNICA. The main focus of our small and young university (it started functioning in 2002 and as of the current date has 220 students enrolled or graduated) is to respond to Colombia's National Ministry of Education's objective of transforming its citizenry into bilingual English and Spanish speakers. In order to do this, obviously the country will need to train thousands of bilingual teachers, and train them well. ÚNICA has created undergraduate and graduate level programs to fill this need. Additionally, this nationally accredited university focuses on preparing teachers who come from humble backgrounds. Many of our undergraduate students are the first in their family's history to graduate from high-school let alone make it into a university. Within just five years our undergraduate students strengthen their academic Spanish while also learning English at the higher education level. To achieve this, they take content-based courses in English and Spanish which include: research, pedagogy, linguistics, history, social sciences, literature and educational administration. Approximately half of their courses are taught using English and the other half are taught in Spanish so that both languages inform each other, creating balanced bilingual professionals. On top of all this, our graduate program works in conjunction with some of the most highly recognized private bilingual

schools in Bogotá as well as with other public and semi-private schools which are in the process of becoming bilingual.

The SIOP model is an especially good fit for our college because part of ÚNICA's mission is to strengthen our students' first language while they learn a second one. Additionally, our students not only learn about the second language through formal and systematic linguistic analysis but they also learn *content* through their second language. Following this pattern, our students evenly develop all four language skills (listening, reading, speaking and writing) as well as social and cultural competencies due to the fact that they need to use the target language to accomplish a great variety of tasks. Such a demanding exercise provides an ideal foundation for future success in all their academic and professional work... in both languages.

It should be noted that, when ÚNICA professors teach through this model they are, in the same instance, training future teachers to reciprocate with the same methods. Therefore, we have high hopes that our student's learning processes will constantly generate fresh new bilingual learning and that our promotion of SIOP will become self-propagating.

B. Area of Focus

At ÚNICA the faculty has formed a research group to study the applicability of the SIOP model both for students at the higher education level as well as for teacher training. It is hoped that as faculty members train themselves in SIOP, they will model the best pedagogical practices to their aspiring student-teachers and that the practices learned will be used by these future teachers when they move into bilingual schools on their own.

C. Research Questions and Plan

This study (which is qualitative in nature) takes place along several phases of a multi-semester project. Below is a broad description of the plan. As the project continues to develop, new research questions undoubtedly will unfold, especially those pertaining to administration, supervision and the training of local school teachers through university extension programs. Currently, ÚNICA's researchers are testing the limits of the SIOP model, identifying promising opportunities for professional development and opening up outreach opportunities with local schools.

The broad goal for this research project is to explore the usefulness of CBI, particularly the SIOP model, at the university level in the Republic of Colombia. More specifically, we are interested in finding out what

changes are necessary in order to effectively apply the SIOP in the context of: (a) higher education; (b) in Bogotá, Colombia; (c) in an undergraduate university-level teacher-training program. These three elements are factors of very practical and immediate concern for our institution's mission, of course. It is also relevant for our readers to know that we are conducting smaller studies, more for our own institutional improvement, regarding the experiences of professors and their students as they learn how to apply the SIOP at ÚNICA.

D. Data Collection

For each of the aforementioned factors, data has and will continue to be analyzed with scientific regard to chronological progress. Video tapes of classes that use the SIOP framework were taken at the beginning of the project after professors had been given a broad orientation to the SIOP model. Each video tape was subsequently rated by at least two observers who had been trained to provide inter-rater reliability in their judgments. With this training, our researchers learned to both observe and evaluate the same events in a consistent manner. Toward the end of 2008, the professors will once again be videotaped in order to observe advancement in the application of the model. The second set of tapes will be rated, and, professors will continue to provide written reflections on their own learning processes. This data also will be added while yet a third source of information will be collected to promote general faculty learning. Such information should be collected from transcriptions of commentaries made during our bi-weekly meetings. In these meetings, the faculty discusses their experiences for each two-week time period.

Finally, researchers for each sub-component study will gather additional data, using that which was previously collected to analyze information for each particular focus of the study. Such additional analysis may be based on questionnaires, interviews, surveys, or work samples (both from students as well as from professors).

Throughout the study, researchers will compare data both across courses as well as across professorships to observe possible trends. They will do so especially to answer the two broad research questions (explore usefulness of CBI and see what changes are necessary to effectively apply the SIOP model). For the second question and with reference to student experiences with SIOP, researchers will judge the data from the same cohort of students across semesters as well as the experiences of the same professor across cohorts. By analyzing data both longitudinally and latitudinally, we trust that the research will yield a richer, more robust picture of ÚNICA's experience with SIOP.

E. Current Status

As of July 2008, we were almost halfway through our initial study plan regarding professor training in applying SIOP. This principal study has been broken down into sub-studies as new facets of the SIOP model are introduced to the faculty. The sub-component studies of Lesson Planning, Building Background and Comprehensible Input are completed and the findings have been written. Fortunately, the reader will be able to participate in the findings of the Lesson Plan facet as they appear in this same issue of GiST. The last six sub-component studies should continue to be made available to our readership in future issues of the journal.

F. Future Plans

Throughout the last half of 2008, we will begin to explore the student experiences with ÚNICA's adoption of SIOP. We are fortunate to have six very competent researchers who are ÚNICA students; these we refer to as our *co-researchers*. The co-researchers have found further coherence in their teacher development by amalgamating both their thesis and student teaching practicums into the SIOP study.

My hope is that the following presentation of the theoretical framework and review of the literature that inform our research will help situate the reader within the context of the ample professional work that has already been developed regarding CBI.

II. Theoretical Framework

In order to identify the contributions this study can make to the field of bilingual education, faculty and co-researchers first positioned it among relevant theories and research which the reader will see summarized below. A sound way to structure our discussion regarding second language learning in academic contexts was to refer to Virginia Collier's *Prism Model* (1995). This allowed our group to understand the interconnections between conceptual learning, linguistic learning, and academic development in a bilingual learner's languages, particularly through a specific social context. We also looked at Vygotsky's *Socio-Cultural Model* (1962), Stephen Krashen's *Input Hypothesis* (1982), and Jim Cummins' well known work on *Context-Embedded* and *Context-Reduced Environments* (1981). Finally, we explored the work of Benjamin Bloom and his colleagues regarding *Higher Order Thinking Skills* (1956). This last theoretical base contributed to our understanding of the ways in which cognition is mediated by language and socio-cultural influences. It's apparent that a brief review of each of these contributions is called for at this point in the article, just as is an explanation of the ways in which these contributions have helped our

research team. I will start the review with the latter of the theories, that of Bloom, and work backwards, respectively.

The work of cognitive psychologists, specifically that of Bloom, revolutionized the way educators perceived the learning process. Bloom's team was able to effectively argue that there are six levels of reasoning starting from the simplest, *Memory*, and ending with the most complex, *Evaluation*. As the name implies, memory involves remembering data. This is the level of reasoning most often used in education throughout most of history, especially because it is the easiest to test. *Comprehension*, the second level, focuses on the ability to make sense of data. *Application*, the *third* level allows the learner to use the information in a practical manner. *Analysis*, the *fourth* level, works with the type of thinking that involves taking apart a whole and looking at the constituent parts individually in order to understand their contribution to the entire concept, process or product. Alternatively, *Synthesis* deals with understanding the ways in which constituent parts coordinate with each other. Finally, *Evaluation* centers on judging the quality of a product, concept or process against a set of criteria. Each level forms the basis for the succeeding level. Therefore, in order to illustrate Bloom's Taxonomy of Educational Objectives, the quality of someone's comprehension (the second level) influences the quality of their analysis (the third level).

The levels of reasoning described above occur in environments where learners are working with material that lie on a continuum that goes anywhere from simpler to more complex processes. When learners must store several pieces of data in their working memory simultaneously in order to think through a problem, the cognitive aspect of the learning environment becomes progressively more complex. For example, those of us who have learned to solve multi-step problems in math, such as quadratic equations or multiple regressions, know that skills involving addition, subtraction, multiplication, division, algebraic notation, etc., are all involved in working through just one exercise. Such an exercise is, indeed, cognitively demanding for one to master. Yet as a learner becomes practiced at solving quadratic equations the process becomes simpler because certain steps become automatic and the learner doesn't need to consciously account for them anymore. The key to mastery lies in reaching a level of *automaticity* (McGlaughlin, 1990). As a process becomes more automatic to the learner, it also becomes less cognitively demanding. It is a natural application of these concepts to quantify levels of *cognitive demand* on a continuum.

Jim Cummins (1981) describes the process of reaching automaticity

as lying on another continuum in which certain activities occurring in schools gradually become more cognitively demanding at given points in time for a learner. At the same time that lessons in schools occur in situations that are gradually more abstract, these situations demonstrate gradual degrees of *context-embedding* or *context-reduction*. When children learn to cook, for example, the items to which the teacher refers are usually within sight and easy to touch or at least point to, thereby being context-embedded. This teaching moment is an example of a more concrete, tangible context of communication. Yet, when students are deriving grammar rules during a language class, learning is based on a more symbolic and abstract environment, thereby being context-reduced. Cummins' theory then implies a logical corollary which is: If second language learners lack a sufficient level of vocabulary to understand the symbols in an abstract lesson, they will essentially miss the point of what is being taught because they are left without access, without a "learning bridge" as it were, to unlock the meaning of the codes. Teachers who are able to precisely identify their learner's needs for context embeddedness and cognitive demand on these two continua of communicative environments will be able to provide instruction that is comprehensible. (See illustration A, please).

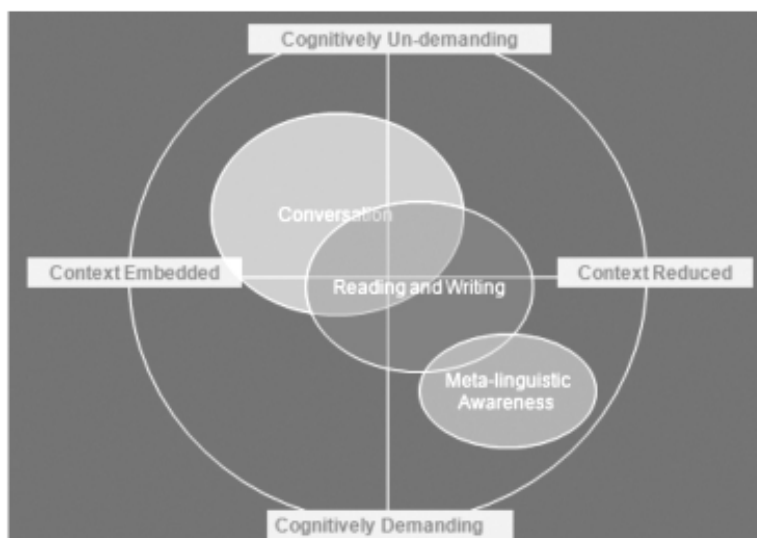


Illustration A: The Two Continua of Communicative Environments. Adapted from: Bialystok, E. (1994). *Language processing and language awareness by bilingual children* (pp. 141-166). Oxford: Oxford University Press.

The idea that instruction needs to be comprehensible is another contribution to the field of second language acquisition posited by Stephen Krashen, a follower of Chomsky's Theory of Universal Grammar. In his *Input Hypothesis*, Krashen proposed that language develops as learners are exposed to an environment that allows them to understand a communicative message in much the same way that children very naturally learn their first language. As children are exposed to input that is slightly higher than their current level of production in the language, they are capable of absorbing the new information. Alternatively, they won't integrate information from much higher levels because it is as yet too complex for their existing knowledge base. Evidence for this can be seen in the obvious fact that young children will not usually understand a lecture at a medical school because the material is simply too far out of their reach. The same is true for second language learners whose language will develop naturally with input that they understand, eventually bringing them to the level of language acquisition to which their professors are inviting them.

Similarly, Vygotsky posited that learners operate in a *Zone of Proximal Development* (1962). The theory simply states that, at any particular time, a learner will maintain a level of understanding about a concept, process or product and not go beyond that level unless assisted by someone else. Vygotsky puts more importance on the role of the teacher than Krashen and shows us that it is the teacher who accompanies and assists the learner to function at higher levels until the learner can operate alone. We can compare his perspective to the classic situation in which a parent helps a child learn to ride a bicycle. At first that parent will sustain the bike as the child learns to balance and peddle. Then, gradually, the youngster will peddle faster with the parent gently guiding the bike. As the child gains confidence and skill, the parent will run alongside the new cyclist: praising, suggesting, and helping him/her to take notice of the bumps in the road. As the child becomes more independent, the parent will allow the child to move away at further distances, each time intervening less until the child moves freely and independently. According to Vygotsky, the same is true with language and cognition. More competent instructors, often naturally and unconsciously, tend to structure dialogue in a way that supports learner's thinking processes encoded through language.

The ideas contributed by the theorists identified above become cohesive and complementary through an understanding of Collier's *Prism Model* (1995). Essentially, her model can be drawn as a three-dimensional prism where each side represents a component for learning

in and through a second language. Collier represents the student's first language as *L1* and the second language as *L2* in her diagram, seen below. Although I'll describe the model, I suggest that readers explore the work of Jim Cummins (1994), Alba Ortíz (2001), Wallace Lambert (1982), and Tove Skutnabb-Kangas (2006) which should be of help in deepening the reader's understanding of it.

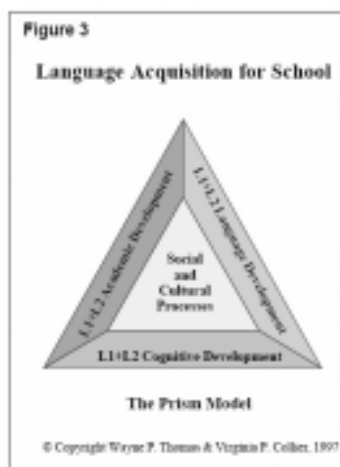


Illustration B: Taken with permission from: <http://www.ncela.gwu.edu/pubs/resource/effectiveness/thomas-collier97.pdf>. (page 42, figure 3)

For Collier, the first of the three sides is *Language*. Learners need to continue to develop both their maternal and target languages in an uninterrupted fashion. Complementary development of both languages allows for wider opportunities to access information as well as the adequate expression of student knowledge. As is commonly the case, if the native language becomes arrested in its development, there most certainly will be negative effects on the other two sides of the triangle... and learning in general.

The second side is *Cognitive Development*. Second language students must work at all six thinking levels as identified by Bloom. Too often foreign language lessons simply work at the bottom two levels of reasoning: memory and comprehension. This relegates class lesson to extensive practice exercises and reading sections with the typical follow-up questions that, when over-used, weaken student interest and motivation. On the other hand, students become much more participative when teachers use all six levels consistently in their classes.

The third side of the Prism Model involves *Academic Development*. When school program administrators take time away from academic subjects in order to provide second language instruction, Collier has shown that student achievement deteriorates on both ends. When less time to learn about academic content is designated, that means that less will be learned in a particular subject. In those situations, when language instruction is committed exclusively to the direct analysis of a language, divorced from context, language learning is isolated. Students are then left with information they won't know how to integrate into a larger educational schema. When second language learners are empowered to integrate content knowledge (such as that learned in science class) along with the second language, they are able to transfer linguistic information to broader frameworks of understanding with more ease.

The last aspect, the one which permeates all of three sides of Collier's Prism Model and, in truth, lies at the heart of all learning is the *Social and Cultural Environment* in which learning takes place. The power of Sheltered Instruction is dependent on the climate of trust and respect for learning it may promote. Vygotsky's work reminds educators that students place their sense of dignity and vulnerability in the hands of their guides. Just as the child learning to ride a bike needs to first feel the supportive hand of a parent before going off alone, our students need to know that their teachers (and even their classmates!) are worthy of their trust. Only then will students socially construct their learning to the maximum of their potential.

CBI becomes attractive to the mind of a second language teacher when the design of the school curriculum is informed by the theories we have just reviewed. Sheltered Instruction, as seen through the Prism Model, seeks to continuously merge language, cognition, and academic development in both languages. Cummins' continua of Context Embeddedness and Cognitive Demand guides second language teachers towards proper planning, orientated towards a protective style of instruction. Krashen's Input Hypothesis leads us to consider the type of classroom environments needed to provide plenty of cues so that students will easily access content-based academic material in the new language. Finally, Bloom's work reminds teachers to plan lessons that are cognitively stimulating and enriched with higher, not lower-order thinking.

III. Review of the Literature

The theories presented above have been widely used to form a rationale for using Content Based Sheltered Instruction with second

language learners. At this point, it is important for the reader to be clear on how Sheltered Instruction has evolved and why CBI came into its current popularity. The following section will provide a description of these two with a review of their effectiveness in various international contexts. For the sake of brevity, only a short review of studies will be presented with the goal of giving the reader a general idea of the breadth of the literature already published on the subject.

Contributions such as Merrill Swain's arguments for *Communicative Competence* (1985), as opposed to traditional methods of grammar analysis, changed the way many foreign language educators approached language teaching. Since then, many researchers and practitioners around the world have gradually come to understand that it is not enough to know a foreign language by simply mastering its grammatical rules. Rather, it has finally become apparent that language develops to the degree that it is used for authentic purposes (Krashen, 1982; Cummins, 1981). Gradually, a shift in priorities began to emerge as foreign language classrooms focused more on the meaning and less on the form of communication. Along with other variations on the challenge of working with meaning more than form, CBI began to be explored during the 1980's.

Although definitions vary, the common focus of CBI is teaching subject matter concepts through a second or foreign language. Some current CBI programs put more emphasis on using content, but only as a vehicle for learning a language while other programs focus on the content to the degree that language learning becomes a peripheral concern. CBI today can be found in a wide spectrum of models (Met, 1991). On one side of the spectrum, *Full Immersion* models use the target language exclusively for the entire school day and across all subjects. Other models only teach the target language through a separate foreign language curricula that include just enough content to make the target language easier to comprehend and recall. Sheltered Instruction (SI) programs fall around the middle of these two extremes. In SI, non-native speakers (NNS) are usually separated from native speakers in order to more precisely match the needs of the NNSs. Teachers adjust their approaches to their students' proficiency levels and varying linguistic needs in order to understand subject matter concepts more fully than they would if they were in a mixed environment (Dueñas, 2004). In several SI programs, the role of the student's mother tongue is valued and recognized as a necessary component for acquiring the second language more efficiently and comprehensively (Echevarria, Vogt, & Short, 2004).

Currently, CBI models can be seen in a wide gamut of program offers on the kindergarten through twelfth-grade levels. Yet many CBI programs are also found in universities where professionals in a wide array of disciplines learn English through subjects such as accounting, dentistry and economics. These programs are most often categorized as falling into the realm of English for Specific Purposes (ESPs). Still other educational programs utilize CBI, but only as a temporary measure in order to prepare students for entrance into programs that are taught completely in the target language. These CBI initiatives are commonly found in universities with large numbers of immigrant or foreign students who require a boost in language preparation before participating in the mainstream curriculum. These programs, classified as English for Academic Purposes (EAPs) provide intensive support in the four language skills (reading, writing, speaking and listening) while the students slowly become integrated into their major area of degree study (Dueñas, 2004).

While CBI apparently had its start in North America, it rapidly spread to Europe, Asia, and is currently taking hold in Latin America. Dueñas provides an extensive but not exhaustive review of CBI around the globe. Reviews of the experiences and effectiveness of CBI in the U.S. can be found in Crandall (1994); Short (1994); as well as in Echevarria, Short, & Powers (2003). One can also find a great abundance of studies published in Europe under the nomenclature of Content and Language Integrated Learning (CLIL). The work of Marsh & Wolfe (2007) is one of the most current and comprehensive European treatments of the subject. Fortunately, some publications are also coming out of Asia. One in particular documents neophyte teachers' growing understanding of how to apply CBI in Singapore (Silver, 2008). Another publication by Rosenkjar (2002) examines the effectiveness of CBI in a university level literature course in Japan. Still another study documents the way a CBI course has prepared university students for academic English in Thailand (Owen, 2002). Only a handful of experiences have been published in Latin America. In Argentina, Snow, Cortés & Pron (1998) published their experiences in K-12 settings as new educational reform laws were producing serious changes for teaching practice. Other researchers such as Bryan & Habte-Gabr (2008) are documenting their experiences with ESPs in tertiary settings in Colombia. Yet there is but scarce information emanating from Latin America and the information based on research is more scarce as one focuses on that which regards bilingual teacher development. This is precisely where ÚNICA's research is making a significant contribution.

IV. Conclusion

ÚNICA's research project adds to the literature base in several dynamic ways. The distinctive structure of ÚNICA's curriculum and student population provide an ideal opportunity to test the model on a higher educational level. Our project focuses on the implementation of CBI through the SIOP model while, up to now, the SIOP model has only been piloted with K-12 settings (and largely in the U.S.) We believe that the Latin American context, to which our university contributes, holds great potential for promising results but we also hope to motivate those who are working in other parts of the world to make full use of the potential that exists in their region.

Only relatively recently is this model being applied beyond the U.S. borders. The European Community is where most publications are documenting the utilization of the CBI-CLIL model. Beyond Europe there are relatively few studies published. So far, scarce information is found coming from African countries and, as we just noted, only a few have come from Latin America. Given the national priorities of many Latin American countries to develop bilingual/multilingual citizen populations, it appears to be a highly propitious moment to explore the effectiveness of CBI, especially in its SIOP formulation.

In conclusion, it's a simple fact that nations wanting to compete in the global marketplace need well-trained bilingual teachers now. ÚNICA is working with the goals of Colombia's National Ministry of Education (MEN) by responding to this reality. We invite others to work within their own cultural and linguistic contexts as they prepare the teachers who will shape the future of our world. You may be pleased to discover, as we have, that your students learn English better... learning to teach it!

"Si quieres aprender, enseña."
- Cicerón

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