Although estimates of the number of language minority students in U.S. schools vary, there is consensus that the numbers are rising dramatically. "Increasingly, the American classroom is multiethnic, multiracial, and multilingual at all levels" (Crandall, 1992). In response, a number of program models have been developed to meet the needs of language minority students, many involving the integration of language and content instruction. In addition, attention to the lack of foreign language proficiency among Americans has led to the development of a number of foreign language programs that integrate academic content into language instruction. In this approach, the second or foreign language is used as the medium of instruction for mathematics, science, social studies, and other academic subjects; it is the vehicle used for teaching and acquiring subject specific knowledge.

This Digest discusses the rationale for integrating language and content instruction and provides an overview of some of the program models and teaching techniques that focus on this approach.

**Why Use Content-centered Instruction?**
In the United States, Krashen's theory (1982) of second language acquisition has influenced the development of integrated instruction at all levels. Krashen suggests that a second language is most successfully acquired when the conditions are similar to those present in first language acquisition: that is, when the focus of instruction is on meaning rather than on form; when the language input is at or just above the proficiency of the learner; and when there is sufficient opportunity to engage in meaningful use of that language in a relatively anxiety-free environment. This suggests that the focus of the second language classroom should be on something meaningful, such as academic content, and that modification of the target language facilitates language acquisition and makes academic content accessible to second language learners.

Cummins (1981) argues that individuals develop two types of language proficiency: basic interpersonal language skills and cognitive academic language proficiency. He suggests that these two types of proficiency vary according to the degree of context available to the individual and the degree of cognitive challenge of the task. Social language can be acquired in 1 to 2 years, but the level of proficiency needed to read social studies texts or solve mathematics word problems can take 5 to 7 years to develop (Collier, 1987).
Integrated language and content instruction offers a means by which English as a second language (ESL) students can continue their academic or cognitive development while they are also acquiring academic language proficiency. It also offers a means by which foreign language students can develop fuller proficiency in the foreign language they are studying. In foreign language or two-way bilingual immersion programs, in which a portion of the curriculum is taught through the foreign language, some type of integrated language and content instruction appears to be essential.

**Program Models**

**Content-based language instruction.** In this approach--also called integrated language and content instruction--ESL, bilingual, or foreign language teachers use instructional materials, learning tasks, and classroom techniques from academic content areas as the vehicle for developing language, content, cognitive, and study skills. The second language is used as the medium of instruction for mathematics, science, social studies, and other academic subjects. Instruction is usually given by a language teacher or by a combination of the language and content teachers.

**Sheltered subject matter teaching.** This approach involves adapting the language of texts or tasks and use of certain methods familiar to language teachers (demonstrations, visuals, graphic organizers, or cooperative work) to make instruction more accessible to students of different English proficiency levels. This type of instruction is also called sheltered English or language-sensitive content instruction and is given by the regular classroom or content teacher, or by a language teacher with special expertise in another academic area (Brinton, Snow, & Wesche, 1989).

**Theme-based.** In these programs, a language curriculum is developed around selected topics drawn from one content area (e.g., marketing) or from across the curriculum (e.g., pollution and the environment). The goal is to assist learners in developing general academic language skills through interesting and relevant content.

**Sheltered instruction.** Here, a content curriculum is adapted to accommodate students limited proficiency in the language of instruction. This model was originally developed for elementary foreign language immersion programs to enable some portion of the curriculum to be taught through the foreign language (Genesee, 1987). It is commonly used in immersion and two-way bilingual programs (Met, 1991) and has been adapted for use in second language programs with large numbers of limited English proficient students of intermediate or advanced English proficiency.

**Language across the curriculum.** This is the name given to content-centered instruction that involves a conscious effort to integrate language instruction into all other curricular offerings. This may include the development of integrated curricula and some kind of paired or team teaching.
In schools where enough students share a common first language, bilingual programs using sheltered instruction have been developed. In one program, students move from content instruction in their first language to sheltered-content instruction in English, and then to mainstream classes where they are integrated with English-speaking peers. They receive content-based ESL as well (Freeman, Freeman, & Gonzales, 1987).

For schools with insufficient numbers of language minority students to create sheltered language programs, the techniques for sheltering instruction can be implemented in classes with both native and non-native English-speaking students.

**Adjunct model.** This model links a specific language learning course with a content course in which both second language learners and native English speakers are enrolled. The courses share a content base, but the focus of instruction differs. The language teacher emphasizes language skills, such as academic reading or writing, while the content teacher focuses on traditional academic concepts. This model requires substantial coordination between the language and content teacher; usually the ESL teacher makes the extra effort of becoming familiar with the content. An adjunct program is usually limited to cases where students have language skills that are sufficiently advanced to enable them to participate in content instruction with English-speaking students.

**Cognitive Academic Language Learning Approach (CALLA).** This approach combines language, content, and learning strategy instruction into a transitional ESL approach for upper elementary and secondary students of intermediate or advanced English proficiency (Chamot & O’Malley, 1987).

**Teaching Methods**
There are a variety of strategies and techniques used in content-centered second language instruction. Here, the discussion will be limited to four types of strategies--cooperative learning and other grouping strategies, task-based or experiential learning, whole language strategies, and graphic organizers--that increase attention to academic language learning, contribute to content learning, and encourage development of thinking and study skills. (See Crandall, 1992, for additional information.)

**Cooperative learning.** In this method, students of different linguistic and educational backgrounds and different skill levels work together on a common task for a common goal in either the language or the content classroom. Cooperative groups encourage students to communicate, to share insights, test hypotheses, and jointly construct knowledge. Depending on their language proficiency, students can be assigned various roles as facilitator, recorder, reporter, or illustrator. Other grouping strategies involve peer tutoring or pairing a second language learner with a more English-proficient peer.
**Task-based or experiential learning.** In this approach, appropriate contexts are provided for developing thinking and study skills as well as language and academic concepts for students of different levels of language proficiency. Students learn by carrying out specific tasks or projects: for example, "doing science" and not just reading about it (Rosebery, Warren, & Conant, 1992).

**Whole language approach.** The philosophy of whole language is based on the concept that students need to experience language as an integrated whole. It focuses on the need for an integrated approach to language instruction within a context that is meaningful to students (Goodman, 1986). The approach is consistent with integrated language and content instruction as both emphasize meaningful engagement and authentic language use, and both link oral and written language development (Blanton, 1992). Whole language strategies that have been implemented in content-centered language classes include dialogue journals, reading response journals, learning logs, process-based writing, and language experience stories (Crandall, 1992).

**Graphic organizers.** These provide a "means for organizing and presenting information so that it can be understood, remembered, and applied" (Crandall, 1992). Graphs, realia, tables, maps, flow charts, timelines, and Venn diagrams are used to help students place information in a comprehensible context. They enable students to organize information obtained from written or oral texts, develop reading strategies, increase retention, activate schema as a pre-reading or pre-listening activity, and organize ideas during the prewriting stage (Crandall, 1992).

**Conclusion**

Although this Digest has focused on content-centered language instruction in the United States, similar interest in integrated language and content instruction is evident in many parts of the world, especially in countries where English serves as the medium of instruction for part of the educational program.

Among the issues facing content-centered language instruction in the United States is the need for research to evaluate the effectiveness of integrated instruction, specifying optimal conditions for various programmatic effects, including the timing of integrated instruction, the relative effectiveness of different program models, and the use of various instructional strategies, texts, and assessment measures. Teacher training is another concern as the number of second language learners in U.S. classrooms increases. To accommodate this diverse student population, content-area teachers need to know how to shelter their instruction, and language teachers need to learn how to integrate academic language and content better in their classrooms (Crandall, 1992).
References

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